THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LVII. SATURDAY, DECEMBER 13, 1890. NO. 24.

ORIGINAL LECTURES.

THE CURE OF PROCIDENTIA UTERI.

A Clinical Lecture
delivered at the Woman's Hospital of Chicago,
October 20, 1890.

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LADIES AND GENTLEMEN: While our patient is being anæsthetized I will call your attention to the conditions upon which procidentia uteri depends. The first conditions to be taken into consideration are, of course, the natural position and attachments of the uterus. The normal viscus is small, weighs but four ounces, and is situated well up in the pelvis, with the os pointing backward toward the lower end of the sacrum. Its supports may be divided into three sets: the superior or sustaining, the inferior or retaining, and the external or supplementary.

The pelvic organs are roofed over by the peritoneal membrane, which is reflected about them like gables, and which, with the muscular and fibrous tissue in and under them, constitutes the sustaining supports or ligaments. The bladder, uterus, and rectum project upward through this roof of peritoneum like domes, towers, or chimneys, and, as you know, are held in place by a great abundance of connective tissue. Were it not for the variable abdominal pressure over them they would be adequately sustained by these attachments. But when the ordinary pressure is augmented by the muscular action of the individual, this elastic connective tissue is stretched, and the organs come down against the pelvic floor. Here they are retained until the cessation of this additional pressure allows them to be drawn back into place. The pelvic floor consists of the levator ani muscle and fascia, the coccyx, and the tissues of the interior pelvic walls.

The bladder, the uterus, and the rectum each constitutes a chamber in the structure, and each has its outlet, viz., the urethra, the vagina, and the anus. These outlets terminate at the pelvic portico or perineum proper, which, as Emmet has told us, acts as their support—but supports the uterus only in a supplementary manner. The perineum consists mainly of the triangular ligament, and the levator vaginæ, constrictor cunni, transversus perinei, and sphincter ani muscles, with their fasciæ. Now if the perineal body be torn, the urethra, vagina, and rectum having lost a part of their support, tend to protrude, and in protruding weaken the contiguous portions of the pelvic floor and connective tissue. Lacerate the pelvic floor also, and the uterus has nothing to prevent it from protruding under increased abdominal pressure except the elastic superior supports, which, in turn, are weakened by the laxity of contiguous tissues under them. Now let the uterus, particularly its cervical portion, become enlarged from chronic disease; or let it remain in a state of subinvolution, along with subinvolution of the other pelvic tissues; or let a chronic diarrhœa, or proctitis, or a general condition of debility, impair the integrity of the pelvic connective tissue, and procidentia will result.

Our patient, as most of you can see, is the one upon whom we performed a high amputation of the cervix two weeks ago. She acquired lacerations of the cervix and perineum in childbirth, followed by subinvolution of the uterus and vagina, and most of the time during the nine or ten years that have followed, she has suffered from diarrhœa. Two weeks ago the fundus lay on the relaxed perineal body, and the enlarged and lacerated cervix protruded about three inches from the vulva, bringing the vagina, bladder, and rectum down also. The uterus measured four inches in length. The pelvis would hold no pessary, and her condition was one of extreme misery.

As it would have been unscientific to attempt to keep a uterus and vagina of that size in this pelvis, I made an oval incision around the cervix and about half an inch away from it, so as to cut off some of the vaginal walls. I then dissected up the connective tissue as high as the uterine arteries, ligated these arteries with strong catgut, and continued the separation of the connective tissue as high as the internal os. Drawing the uterus well out, I put an elastic ligature about it and the protruding vagina, and proceeded to amputate the cervix near its junction with the corpus. I then drew the vaginal walls together over the stump and stitched the edges to each other and to the cervical mucous membrane. As is often the case, the internal os was very small, even though the uterus was enlarged, and the cervix had been lacerated and everted. I then tamponed the uterus in position for twenty-four hours, and have subsequently kept the woman in bed, using one-per-cent. carbolic acid douches after each urination. The uterus is about the normal size, and has been in a normal position ever since. I may say that the two weeks she has been in bed, and the four that she will remain in bed after to-day's operation, constitute quite an important part of the treatment. The vagina, as is apparent to you, has contracted in the upper part as a result of the first operation, and our endeavor to-day will be to contract its lower portions and the perineum. At the same time I will give it a new attachment to the tissues at the sides of the pelvis over the deeper portions of the levator ani muscles, by a procedure somewhat different from those that have been employed by other operators.

Having cleansed and disinfected the field of operation, I remove a strip of mucous membrane nearly one inch

wide from the left lateral vaginal wall just above the sulcus and extending from the carunculæ about two inches back toward the cervix. The wound bleeds profusely, as I knew it would, but the bleeding does not matter, as I shall immediately close the wound with uninterrupted catgut sutures. The stitches are passed deeply into the fascia at the upper edge, then out into the wound, then into the bottom and through the lower edge, so as to gather up the looser tissue and lower edge, and bring them to the upper edge and firmer fascia. Having completely closed this wound, I put in two silkworm-gut sutures to relieve the strain upon the catgut. I now quickly excise a similar strip from the right vaginal wall, and close it in the same way. The posterior vaginal and anterior rectal walls are now drawn well up in their proper places and firmly held, while the vagina has become quite narrow, except under the neck of the bladder.

There is one point in connection with this operation on the lateral vaginal wall that deserves your attention, namely, it is not merely a denudation but a removal of the entire thickness of the mucous membrane, and opens into the cellular tissue. The vagina is thus not only narrowed, but the connective-tissue attachments are in part restored. This is an idea that has been overlooked in the various operations for prolapse. But the frequent failure of methods which are designed merely to narrow the vagina and build a perineal body afford convincing proof of its importance.

With this long-handled needle I now pass a silk suture around a circular space of sagging vaginal wall, about the size of a silver half-dollar, just under the neck of the bladder, cut out the mucous membrane within the circle, and draw the edges together with the silk puckering string, as if it were the mouth of a purse. Now all is tight internally, and we have but to reconstruct a perineal body externally.

For our present purpose nothing is better than Tait's flap-operation. Entering the point of the scissors high on the inside of the left labium, and a short distance external to the vaginal sutures, I cut deep into the tissues, and carry the point of the scissors down the labium, across the perineal body, a little above the sphincter ani, and upward on the other labium. With a few additional snips I lay open the tissue quite deeply, catch up the centre of the superior edge of the wound with forceps, and draw it well up so as to make the wound more perpendicular than transverse. You will observe that this wound has no connection with the lateral vaginal wounds previously sutured, being entirely below them. Commencing at the upper end of the labial incision, I pass silkworm-gut sutures into the raw tissues under, but not including, the edge of the skin, and bring them out on the other side, also under the edge. Now that they all are in, I find it more convenient to tie from below upward, and the patient is ready to be cleansed and put to bed. Plain vaginal douches will be given after each urination for forty eight hours, then douches of one-per-cent. carbolic acid solution. In four weeks she will be permitted to get up and go home.

It is well for me to remind you that this procedure will not do for every case. Had the uterus remained retroverted after the amputation of the cervix, I should have performed Alexander's operation. The reason that the latter operation cannot always be depended upon is because the round ligaments are often stretched to such an extent that they cannot be found or utilized. The popular objection that the ligaments are not strong enough to hold up the uterus is based upon ignorance of their action. They merely hold the fundus forward so that abdominal pressure will be exerted upon the posterior surface of the uterus, the retention of which, after it is placed in this advantageous position, is the work of other supports.

When the inguinal canals are opened during the Alexander operation, it becomes an easy matter to suspend the prolapsed bladder. We may cut through the posterior walls of the canals, separate the loose connective tissue from the pubic bones, pass sutures down through the vaginal walls on either side of the neck of the bladder, draw up the prolapsed vesico-vaginal septum, and stitch it behind the pubes. I prefer to use silkworm-gut sutures, and include a portion of the vaginal walls and pillars of the external inguinal ring in each.

Shortening the sacro-uterine ligaments has been done in various ways, both through the vagina and in the abdominal cavity. Cauterization of the vagina, incomplete closure by uniting the denuded anterior and posterior walls, or the denuded lateral walls; removal of almost the entire anterior or posterior wall, etc., have been tried with varying success. Our time is too valuable to allow us to describe the numerous forms of denudations in use, such as triangles, quadrilaterals, pentagons, circles, ovals, parallelograms, monograms, butterflies, and other figures of professorial fancy.

In order to extricate our minds from this confusion of methods, we should never forget that in each case there are certain defects either of the superior, inferior, or supplementary supports which must be remedied. The perineal body, pelvic floor, connective-tissue attachments, uterine ligaments, or the vagina and uterus themselves, must be thought of, while the Chinese puzzle of denudation, as figured in many of the text-books, should be duly treasured as an interesting relic of mediæval art.

In some slight cases Thure Brandt's uterine massage, by restoring tone to the muscular fibres, suffices for a cure.

In case of diseased ovaries, we may be justified in opening the abdominal cavity, removing them with as much of the relaxed broad ligaments as possible, and stitching the stumps to the anterior abdominal walls. An operation upon the sacro-uterine folds would also be justifiable at such a time.

Removing the entire uterus *per vaginam* will, of course, cure the procidentia uteri. But if we confine ourselves to that, the relaxed tissues will be apt to permit the vagina and intestines to protrude, and thus fail to cure the patient. I have, in fact, had to perform some of these operations after the uterus had been taken out. If, however, we decide to remove the uterus for procidentia, we should at the same time remove all the redundant vaginal wall in such a manner as to secure lateral connective-tissue attachments.

The Buffalo Medical College.—It is said that the buildings of the Buffalo Medical College will soon be remodelled and enlarged.

ORIGINAL ARTICLES.

THE USELESSNESS OF SPLINTS IN FRACTURE OF THE LOWER END OF THE RADIUS.[1]

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THE treatment of fracture of the lower end of the radius is exceedingly satisfactory, because the character of the injury seldom varies and because the results obtained are usually good both in rapidity of cure and in perfect restoration of function.

This statement is, perhaps, unexpected, since it is not unusual to find the opinion expressed in text-books that this fracture is troublesome to treat, and very liable to be followed by deformity of the wrist and stiffness of the fingers. I am convinced that such unfortunate results usually come from mismanagement of the fracture, and are due to a want of appreciation of the nature of the lesion, and of the necessity for forcible reduction immediately after its receipt. These errors of judgment and treatment are perpetuated by the current belief that the essential treatment of a fracture is the application of a splint.

I propose to show that in the great majority of cases fracture of the lower end of the radius needs no splint; and hence that splints for this injury are usually useless. If the tendency to use a splint impels the practitioner to neglect the all-important reduction of the fracture, my position, it seems to me, is strengthened.

The innumerable forms of splint devised for fracture of the lower end of the radius show how much this very common injury has interested the profession. Some of these splints have done great harm because they have misled the practitioner as to the nature of the lesion. A few of them are very good, in that they have been devised in accordance with the anatomy and pathology of the osseous lesion. As, however, in the vast majority of cases, none of them is really needed they are practically useless. The fact that positive harm is liable to be done by their use is a point in advocacy of the abandonment of all such appliances.

The usual cause of the injury is forced extension of the radio-carpal joint, which produces a transverse disruption through the lower end of the radius from three-eighths to one-half an inch above the articular surface. The characteristic deformity is caused by the fracturing force driving the lower fragment upward and backward upon the shaft, or thrusting the shaft downward and under that fragment; so that it is caught or impacted upon the dorsal edge of the shaft-fragment. Occasionally there is a tendency to lateral or antero-posterior obliquity of the line of fracture, but this is rather uncommon. The displacement sometimes occurs much more markedly at the radial than at the ulnar side of the lower fragment, which is then tilted obliquely backward, carrying the styloid process of the radius upward and backward, so that it is on a level with, or even higher than, the styloid process of the ulna. This angular displacement tends to throw the articular surface with the attached carpus upward and backward to the radial side, causing thereby undue prominence of the lower end of the ulna.

Muscular action has nothing to do with the production or continuance of the deformity. In cases in which the fracturing force has not been sufficient to cause displacement, no deformity exists, and in such instances the diagnosis rests upon a localized point of great tenderness about half an inch above the wrist-joint.

Sometimes comminution of the lower fragment takes place so that lines of fracture enter the radio-carpal joint. The ligaments and cartilages are sometimes extensively injured, and sometimes there occurs actual loss of substance by crushing and pulverizing of the bone tissue. These complications, except that of comminution, are quite rare.

Reduction of the fracture, the most important element in the treatment of the injury, is often ineffectually accomplished, or, indeed, not attempted. This is owing to ignorance rather than carelessness on the part of the attendant. When reduction is once thoroughly accomplished, displacement is not apt to recur, because the broad rough surfaces of bone are held together by their serrations, and because there are no muscular masses tending to displace the fragments.

The condition, it will be observed, is quite different from oblique fracture of the shaft of a bone, in which it is often difficult to maintain accurate apposition because of the muscular displacing forces. Hence if reduction, which is the essential in treatment, is properly performed, no splint is needed. On the other hand, if reduction is neglected, no splint will act as a substitute for it. If reduction has been properly accomplished, an improper splint may displace the lower fragment and cause recurrence of the deformity. Hence, abandonment of splints is usually the proper course to pursue, and probably the most judicious method of treatment to advocate and teach.

Comminuted fractures, of course, need more support than do non-comminuted ones; but even here, the simple support of a bandage applied in a circular manner, or of strips of adhesive plaster wound around the wrist like a collar will usually be found sufficient.

[1] Read before the Philadelphia Academy of Surgery, November 3, 1890.

In uncomplicated fractures treatment is required for about three weeks.

Perfect function of the wrist and fingers may be expected in nearly all cases; provided that reduction has been properly effected immediately after the injury, and provided that the fingers have not been restricted in motion at any time during the treatment. Slight stiffness of the wrist may be expected for a few weeks in complicated cases; and in such injuries some thickening about the seat of the fracture will persist for two or three months. Slight shortening of the radius, due to loss of tissue by crushing and absorption, occurs in most cases, but the resulting inclination of the hand to the radial side in well-treated cases of average severity can usually be detected only by very close scrutiny.

The statement of some authors that long-continued disability of the wrist and fingers is to be expected is absolutely untrue in the average case of fracture of the lower end of the radius; and is due to observation of cases improperly treated.

The danger of many of the splints advocated for this fracture is due to the non-recognition by their respective inventors of the curved or arched shape of the palmar surface of the lower third of the radius. The dorsum of the bone when covered with the tendons is straight, but the palmar surface is curved. It is readily understood, therefore, that the application of any straight splint (such as that called Bond's splint) to the palmar surface of the broken radius has a tendency to displace the lower fragment upward again, as soon as the bandage which retains the splint in position is applied. A straight splint may, however, be applied with propriety to the back of the wrist. I have used with satisfaction two or three pieces of whalebone held in position by a strip of adhesive plaster. Any rigid article, such as a piece of steel or wood, half an inch wide and five or six inches long, will answer the purpose. The truth is, however, that in a person of ordinary intelligence, who will avoid subjecting the bone to severe strains, there is no need of any splint or rigid support. Exceptions to this rule may perhaps be found in the case of refractory children and of ignorant or stubborn adults. The fact that these persons are liable to use the hand at an early period, and in such a way as to cause a *slight* risk of displacement of the fragments, is evidence of the simplicity and painlessness of the injury and of the satisfactory manner in which union takes place, if reduction has been properly effected.

That the treatment of this fracture is misunderstood by many practitioners is evident to me from the fact that I have repeatedly been obliged to refracture and reduce partially-united fractures of this kind after several weeks' treatment in splints. In a number of instances an exceedingly good splint had been applied though the fracture had not been reduced. A quite recent experience of this kind in which I refractured the bone eight weeks after the injury has forcibly brought the subject to my mind.

Osteotomy, for the purpose of correcting such deformities, is seldom if ever required. I have known a deformed fracture of the radius to be broken for re-adjustment five and a half months after the injury. To do this requires considerable power, but it can generally be accomplished by forcibly bending the bone across the operator's knee.

A few years ago, while holding a position as out-patient surgeon in one of the hospitals of this city, I had occasion to treat, within less than three months, forty-two cases of fracture of the lower end of the radius. Some of these were treated with the moulded metal splint recommended by Dr. Levis; others were dressed with a straight dorsal splint of wood; while in some the wrist was immobilized by means of a single strip of steel, or two or three strips of whalebone applied to the dorsum of the joint by means of adhesive plaster encircling the limb. A few were treated during a part of the time by applying to the palmar surface a curved steel strip, such as the "busk-bones" of corsets.

The accompanying table gives a brief account of the treatment, the time the splints were worn, and the results in these cases. In a few instances no results were recorded in the case-book, either because the patient discontinued attendance or because no unusual condition was found. It is very probable that in the latter case there was not much deformity or disability, else it would have been mentioned. There are a few other cases in the table in which the record is deficient in detail, because the patients were still under treatment when my term of service was completed.

It will be observed that six cases came to me with the lower fragment still unreduced, although in each instance a splint had been applied. In five of these cases Levis's moulded splint, the best splint manufactured for this fracture, had been applied. This fact proves my assertion that it is the custom of many to apply a splint, and often a very proper one, without reducing the fracture. It is this belief in the therapeutic value of the splint which causes many physicians to have bad results in the treatment of this fracture. If the profession were made to understand that no splint can be constructed which will take the place of reduction, better results would be more frequent.

It is interesting to note that all, or nearly all, of the cases tabulated had been originally dressed by the resident physicians belonging to the wards of the hospital. It is also worthy of comment that these residents belonged to a hospital with which at the time were connected two surgeons who have

TABLE OF FRACTURES OF THE LOWER END OF RADIUS.

Age.	Sex.	Treatment.	Days splint worn.	Result.	Remarks.
70	F.	Metal splint	...		Diagnosed sprain at hospital.
21	M.	Metal splint	8		
50	M.	Metal splint	17		
16	M.	Metal splint	9	Good union; no stiffness of fingers of wrist.	
63	M.	Metal splint.			
12	M.	Metal splint	17	No deformity; good motion; no stiffness.	
12	M.	Dorsal straight splint	17		Palmar surface was vesicated by inflammation; hence, used dorsal splint.
60	F.	Metal splint	20	Good motion.	
24	M.	Metal splint	10	Good motion; no deformity.	
65	M.	Metal splint	9	No deformity; good motion.	
38	F.	Metal splint; twelve days later steel strip on dorsum.	18		
40	F.	Metal splint	5	No deformity; no stiffness.	Examined five and a half weeks later; slight stiffness of wrist; some shortening on radial side.
19	M.	Dorsal straight splint put on November 3d, when I first saw him; had Bond's splint on previously.	13	No stiffness; some shortening on radial side.	Weak flexion of fingers; had palmar wound, but not down to fracture.
15	M.	Metal splint	14	Good motion; some bowing at lower end.	
16	M.	Metal splint; three days later, steel strip on dorsum.	7	Motion perfect.	Fracture three days old when first treated, and no deformity then existed.
55	F.	Metal splint	20	Some deformity; slight stiffness of forefinger.	Kept at home by illness; not seen regularly.
13	M.	Metal splint; one day later, steel strip on dorsum.			
68	M.	Metal splint	25 ?	Considerable stiffness.	
48	F.	Metal splint	...		When fracture was two days old reduced again; much comminution: no record to show that it was properly reduced before I saw her.
18	M.	Metal splint; two days later, steel strip on dorsum.	10	Deformity from callus; good motion.	Great deformity before reduction.
44	F.	Metal splint, two days ago, outside; but not reduced. Reduced, applied curved corset steel to palmar surface.	10		The time given is from the time I reduced the fracture.
17	M.	Metal splint; six days later whalebone strips to dorsum.	13	No deformity; perfect motion.	Great deformity before reduction under ether.
35	M.	Metal splint	14	No deformity; perfect motion.	
70	F.	Metal splint; two days later, curved corset steel to palmar surface.	15	No deformity; perfect motion.	
14	M.	Curved corset bone to palmar surface on day after injury; metal splint for one day.	8		
25	F.	Metal splint, three days ago, outside, but not reduced. Reduction, metal splint for one day, then curved corset steel to palmar surface.	7		The time given is from the time I reduced the fracture.
15	F.	Metal splint	17	As no note was made, probably good result.	Treated in hospital; on admi sion great deformity, and had scalp wound; came to out-patient department after union had occurred.
26	M.	Metal splint, three days ago, outside; narrow curved corset steel to palmar surface	10	No deformity; no stiffness.	
39	F.	Metal splint.			
45	F.	Metal splint: three days later, curved corset steel to palmar surface.	13	Good result.	
35	F.	Metal splint			
54	F.	Metal splint; four days later, steel strip on dorsal surface.	...	No deformity.	
55	M.	Metal splint	...	Good result.	
35	F.	Metal splint; eleven days later, steel strip on dorsal surface.	...		Not seen after first dressing until eleven days had elapsed; sick in bed at home during that time.
48	F.	Metal splint, two days ago, outside, but not reduced. Reduction.			
29	F.	Metal splint, two days ago, outside, but not reduced. Reduction.			
25	M.	Narrow corset steel on palmar surface, as there was no deformity.			
30	M.	Metal splint.			
52	F.	Metal splint.			
50	F.	Metal splint.			
40	F.	Bond's splint outside, but not reduced. Reduction, metal splint.			
48	M.	Metal splint	15	No deformity; perfect motion.	Much pain during treatment; chloral and morphine g ven; said to have been broken two years before.

written and done most effective work in teaching the pathology and proper treatment of this particular injury.

The table is instructive, I think, as showing that perfect motion without special deformity was obtained in almost every case. It must be remembered, in addition, that these records were made a few weeks after the receipt of the injury, and that the results, so good at that time, probably became more perfect after the lapse of a longer period.

At the present time I should be inclined in nearly all cases to treat the fracture without using any splint at all; or, at most, I should employ only a thin strip of steel or zinc, or a couple of pieces of whalebone, six inches long, applied to the dorsum of the wrist, and held in place by strips of adhesive plaster.

When the tabulated cases were treated the time during which restrictive dressings were continued was probably less than would be advocated by most surgeons. I have seen no reason to alter my practice in this regard, except perhaps to shorten the time still more. I am now convinced that a roller bandage or a strip of adhesive plaster applied to the wrist in a circular manner is all that is necessary, except in unusually complicated fractures. All ordinary forms of splints should, as a rule, be discarded as useless or dangerous.

The proper treatment of fracture of the lower end of the radius is *reduction*. Little else is required in the ordinary cases.

DISCUSSION.

In discussing this paper DR. WILLIAM HUNT said that he fully agreed with Dr. Roberts that the proper treatment of these fractures is prompt reduction, and that it makes very little difference what splint, if any, is used afterward, provided the pathology and the anatomy are kept in mind. He, however, advocated the use of a splint of some kind in nearly all cases, if only to relieve the patient of pain through the sense of support. He also said that the majority of Dr. Roberts's cases were last seen two or three weeks after they were discharged, whereas, it is six months or a year after the accident that the deformity usually becomes most manifest, as a result of the subsidence of the œdema. We may think that the result is perfect, but when the swelling passes away we may find that there is distinct deformity.

Years ago he had an opportunity to study the pathology of this fracture in a case in which it was necessary to amputate the arm on account of an injury of the elbow-joint. There was at the same time a characteristic radial fracture. In his account of the condition found he stated that there was no displacement of the ulnar side in ordinary cases, but that the hand, losing the support of the radius, falls away, leaving the ulna projecting. This is the deformity which in most cases becomes more apparent five or six months after the injury, and in the majority it is unavoidable. It does not, however, interfere with the use of the hand. Although the treatment of fractures of the lower end of the radius is reduction, we should nearly always put the part at rest with a splint of some kind.

DR. O. H. ALLIS regretted that Dr. Roberts was not present to take part in the discussion. One of the saddest experiences in the duties of a physician is learning that he is not at liberty to do that which in his judgment is best; and this is especially true in the treatment of fractures. There is no department of medical or surgical practice so likely to drag the surgeon into the courts as that of fracture. There are defects other than deformity over which a surgeon has no control, and if a surgeon were to treat a fracture of any kind without splints, and deformity, paralysis, or any permanent disability ensued, the patient would have a strong case in the courts; and very few of the defendant's medical witnesses would be able to sustain him in his course.

THE PRESIDENT, DR. AGNEW, said that probably all would agree with Dr. Roberts that these fractures are badly reduced, and that if properly adjusted it matters little what splint is employed to maintain the fragments in position. To allow the patient, however, to go without any means for protecting the parts, is dangerous, and calculated to expose the surgeon to a suit for damages in the event of an accident, especially with a careless patient, who might take unwarranted liberties with the arm. It must not be overlooked that there are several tendons attached by loops of fascia to the bone, and one tendon implanted upon the latter, though Dr. Roberts states that there are no muscles to cause displacement. It will be difficult to persuade the profession, many of whom have had years of experience in the management of these fractures, to leave the bone without some fixed support.

DR. ALLIS said that with Dr. Roberts he recently attended a clinic of Dr. Pilcher's, in New York. A case was exhibited which had been treated without a splint. This was the first case he had seen treated in this manner, and he thought that it required a good deal of courage on the part of the surgeon. The necessity for a splint is less if the surgeon can see his cases frequently, than as in the country, where the cases cannot be seen so regularly.

DR. L. W. STEINBACH believed that he had seen almost all the cases to which Dr. Roberts referred, and that splints, in the proper sense of that term, were not used, although a strip of adhesive plaster was sometimes applied to remind the patient of the injury. Dr. Roberts sometimes used a corset steel with the curved end applied to the inferior part of the forearm and the hand.

He thought that Dr. Roberts made an important point when he said that the physician's mind should be disabused of the idea of the necessity of a splint. The physician often thinks that when he has applied a splint he has done his entire duty, and rarely dwells upon the importance of reduction. In many of the cases reported in the table a splint had been applied before the fracture was reduced.

DR. DEFOREST WILLARD, while recognizing that the splint does not cure the fracture and that reduction is the important element in the treatment, yet could see no reason why in the majority of cases of careless boys and men, and in fact in nearly all cases, we should not endeavor to maintain the fracture in position after reduc-

tion. Both the injury and muscular action aid in displacing the fragments. Splints are of use in maintaining the reduction, and are safer than leaving the individual simply with a piece of adhesive plaster, which, while it is a reminder, yet will not prevent injury from blows.

DR. JOHN B. DEAVER agreed with Dr. Roberts in some particulars, but said that if he did not know Dr. Roberts so well he would question the diagnosis in some of the cases of fracture of the lower end of the radius treated without splints. In the majority of his own cases the line of fracture was oblique and involved more than one-fourth of an inch of the radius — sometimes as much as one inch or one inch and a half. The extensor muscles of the thumb and the extensors of the carpus aid in producing deformity. He believed that in some of these cases the muscular fibres become entangled between the fragments. Under such circumstances it would be almost, if not entirely, impossible to keep the parts in position without support. One of the cardinal principles in the treatment of fracture is immobilization of the joints on the proximal and distal sides of the fracture. This is just as true in fractures of the lower end of the radius, as it is in fractures of both bones of the forearm. He would not permit a fracture of his own radius to be treated without a splint, and he would not treat a patient in that way. It is contrary to all anatomical and pathological teaching. A simple transverse fracture—which is rare—in an intelligent person, requires only a light splint.

In the correction of deformities due to badly-set fractures he believes that osteotomy is more scientific than re-fracture and causes less injury to the soft tissues.

DR. J. EWING MEARS said that the subject was an interesting one. It reminded him that years ago he in connection with the other resident physicians of a large hospital came to the conclusion that the binder after labor was of no service and that it had simply a moral effect. During their term of service they tied a string around the abdomen after labor and believed that the effects were the same as those of a binder. He does not now believe that anything was gained by this, and thinks that patients would complain if obstetricians failed to apply a binder.

In regard to fractures of the lower end of the radius two points were dwelt upon. First, that there is no fracture in the body which is so often treated badly as this. It seems natural for the physician to suppose from the peculiar character of the splint usually employed that its simple application effects the reduction. Secondly, a properly-reduced fracture may result in deformity by reason of a badly-adapted splint. The treatment of fracture is reduction, and retention of the fragments by means of some appliance. The views expressed by others cover the entire ground. Dr. Hunt referred to an important point, namely, the comfort to the patient derived from a properly-applied support. And the President sounded a note of warning with regard to suits for malpractice in cases in which deformity may result.

DR. HUNT said that every hospital surgeon of large experience studies individual cases, and he could recall no ordinary fracture that he has not in some instances treated without splints. In these cases the fracture is reduced, placed in proper position and closely watched.

DR. ALLIS referred to the case of a man injured by a fall from a great height, who was brought to the Presbyterian Hospital, and died in about twenty hours. Among the injuries was a fracture of the lower end of the radius, which he dissected. The injury to the soft parts and bone was so great that if the man had lived the resulting inflammation would have unified all the tendons of the wrist so that no finger could move independently of the others. There was a fracture about three-fourths of an inch above the end of the bone, which ran part of the way across, then downward. The bone was broken into small pieces, as though the fragments had been forcibly rubbed together. The fragments were not interdigitating, and if placed in position would not have remained so. On the dorsal aspect, far removed from the seat of fracture, blood was found in the sheaths of the tendons and also in the bellies of the muscles. In cases of fracture we never know how much injury has been done at the time of the fracture. He has treated a woman who had a severe injury to the wrist from falling down stairs. It was compound, but at once made simple by organized blood-clot. The injury occurred three or four years ago, but the woman is still unable to close her hand. In other cases apparently with the same injury, the result is a perfect cure. The explanation of these cases is found in the different extent of the injury at the time of the accident.

THE MEDICAL TREATMENT OF PERITONITIS.[1]

BY JOSEPH EICHBERG, M.D.,
OF CINCINNATI, OHIO.

THE treatment of peritonitis must necessarily be adapted to the cause, and varies greatly as we are dealing with a primary or a secondary form of the affection. Yet, in many cases, the search for the cause is neither easy nor successful; and while uncertainty on this point may exist, our duty to the patient demands prompt action. The whole history of this affection is so recent that it is rather to be marvelled at that the plan of treatment now generally adopted has been matured in so short a time, and that, if properly carried out, it will in many cases prove so successful, independent of the causal condition.

A moment's consideration of the natural function of the peritoneum will help us considerably to understand why certain measures must be used to attain a favorable issue. As a delicate, smooth investment of nearly all the important organs of the abdominal cavity, its presence greatly facilitates those constant changes of size, position, and mutual relation that result from the various phases of the digestive process; its surface, kept constantly moist by the lymph that finds its way into the cavity, is never with an excess of fluid, because of stomata, or little lymph-mouths, that readily afford exit into the lymphatic circulation of any fluid that may

[1] Read before the Southwestern Ohio Medical Association, October 7, 1890.

accumulate in undue proportions—under physiological conditions.

With the appearance of inflammation the smooth, pliant, moist covering of the abdominal viscera becomes turgid and roughened, its surface covered with a viscid rather than a liquid product, its stomata closed, its cavity filled with the accumulated inflammatory exudations, for which there is no escape. It is now that the necessity for treatment arises. The patient, in the great majority of cases, experiences that symptom, common to many affections, of pain, and pain in a most severe and intolerable form. It is here that we have an indication both causal and symptomatic, for pain itself is prostrating, and pain will kill. The organs covered by the peritoneum are richly supplied with nervous connections, and through these they influence by reflex action the heart and circulation. We know the sudden, it may be fatal, collapse that follows a severe blow or injury upon the abdomen, and it is not difficult to believe that an irritation of less intensity and longer duration would bring about similar results. The pain in peritonitis is continuous, exaggerated by every movement, by every breath; it excludes every other consideration, and prevents sleep and needed rest. It is here that opium comes to our aid—the sheet-anchor, as it has been called, in peritonitis, the splint to the wounded peritoneum. I speak now of cases of acute diffuse peritonitis, the cases that are commonly met with.

It has seemed singular to me, after all that has been written and spoken upon this subject, that it should so frequently be necessary to encourage physicians to a more ready resort to this agent. It would seem that the proper amount of attention has not been given to the teachings of Alonzo Clark, who has summed up his own therapeutic experience of more than fifty years in the article upon this subject in Pepper's *System of Medicine*. Why it is that where such obvious indications for a remedy exist, so many medical men manifest an ill-founded timidity I cannot understand. Assuredly, it can not be the fault of their teaching; and if they only dared to use it properly, their first experience with opium in peritonitis would soon give them the needed confidence to do right by their patients. I feel very strongly upon this point, because it has happened to me to see several cases that made a lasting and very unfavorable impression. In one of these, a case of puerperal peritonitis, seen in consultation not long ago, the patient had been receiving for six days—mark it well—an average of one-fourth of a grain of morphine daily. She had not slept one hour in all that time, and, it is almost needless to say, she died. In another case of acute peritonitis in a boy of fourteen years, I was assured by the attending physician that he gave a hypodermic injection of an eighth of a grain of morphine as often as he thought necessary—as though it were not necessary every half-hour!

The average medical graduate leaves college with the carefully-acquired information that the dose of opium is from one-fourth to one-half a grain, every three or four hours, but that there are marked idiosyncrasies, and that its administration must be anxiously watched. He will, accordingly, treat his case of peritonitis on this plan, constantly feeling uneasy lest in his absence the patient develop narcotism. Finding that no symptoms of poisoning develop he will rest satisfied that he has done the full measure of his duty, and will repeat the small dose every three or four hours in his next case.

It is no imaginary picture that I am drawing; it is what I myself have seen; and it is time that the profession learned to regard this timorous, faint-hearted misuse of opium, deceiving alike to the practitioner and the patient, as malpractice; as criminal as the neglect to recognize a fracture, and place it in a suitable dressing. It has been said that there is no dose of opium for pain. This may be extended, and it may be as truthfully said that the smallest suitable dose of opium in peritonitis is that which will promptly carry the patient to the limits of narcotism, and that the frequency for its repetition is to be determined solely by the degree of narcotism. It is not conscientious regard for the patient's life that prevents the physician from following this plan. It is his own lack of courage which sacrifices the patient.

I am fully aware of arguments that have been advanced in answer to Dr. Clark's report of the case, who, at the height of the attack, received for six days the equivalent of from 421 to 467 grains of opium every twenty-four hours. It is said that of all this large amount but the smallest fraction was absorbed; that to get the proper dose it should be given hypodermically, etc. Supposing it was necessary to give 467 grains to obtain absorption for the amount required to cure the patient, then 467 grains was the proper dose in that case. Hypodermic medication, is unnecessary, as morphine can easily be given in concentrated solution by the mouth, and most of it will be absorbed before it enters the stomach, to say nothing of the intestines. The basis of some of the opposition is, that in the inflamed condition of the peritoneum, the mesentery and its contained vessels, and the intestines and their lacteals, are unable to perform their physiological duty. The full measure of their physiological duty, we will admit, but certainly not a large fraction of it, else how could nutrition be maintained?

A word more as to the opium treatment. To secure its best effect it must be given early. It has

for some time been my rule in every case commencing with fever, prostration, and an acute, localized, continuous pain, to begin the treatment at once with opium or morphine, without regard to the possibility of existing constipation. Should the painful symptoms subside in the course of a day or two the bowels may be opened by a mild saline cathartic, or, by what seems preferable to me, repeated minute doses of calomel; but opium first, and all the time, until convinced that peritonitis, in its diffuse form, has not developed. Little attention need be paid to the bowels at the start. Clark says that he has allowed patients to go for fourteen days without a stool.

The use of opium does not always prevent the regular evacuations, and I have seen a patient who had one movement daily during the entire course of the disease, though for two weeks he was receiving half a grain of morphine every hour, and, doubtless, many similar instances could be narrated. These cases should be regarded as exceptional, since the effect of the opium, as usually observed, is to retard greatly, if it does not wholly arrest, intestinal movements. By diminishing the frequency of respiration the opium tends to eliminate another source of pain, as well as to prevent that rapid spread of the disease which the constant attrition of diseased against healthy portions of the peritoneum will almost surely entail. Upon the circulation, too, the action of the opium must be regarded as largely beneficial. The slowing of the heart-beats with the rise in arterial tension following its use, are ample testimony that, if properly controlled, it is a cardiac tonic. We obtain this result at once, but it is necessary to carry the patient beyond this point, and to induce a sedative action on the circulation.

How are we to judge of the proper degree of narcotism, seeing that it is easy to carry the patient beyond the desired point, especially while employing such large doses? Not by the relief of pain, for this result may be attained early; nor by the contracted pupil, which also shows itself after very moderate doses. The index of the proper degree of narcotism is furnished by the respiration, the pulse, the continual drowsiness of the patient, and the partial relaxation of the abdominal wall. The frequency of the respirations, increased by the embarrassment of the abdominal movements, should be brought down to twelve or ten per minute, and maintained at this rate as long as the symptoms persist; should it fall below this limit, the interval between two successive doses can be lengthened. The pulse of peritonitis is hard and wiry; under the influence of these full doses of opium it becomes slow, soft, and compressible. The drowsiness of the patient is a symptom that should be watched by the physician himself, and not trusted to either nurse or attendant. It should be a drowsiness from which the patient can be readily roused, and should never be allowed to become a stupor. It is well in connection with this, to bear in mind that the maximum effect of any dose of opium or its derivatives is not obtained until three hours after administration—a safe criterion in deciding the frequency of repetition of our doses. With the patient fairly narcotized, there is slight relaxation of the abdominal muscles, the tympanites become less, with corresponding relief from the feeling of tension.

One effect incidental to the use of opium remains to be mentioned, and that is, its influence upon the secretions. It diminishes the saliva and the urine promptly and decidedly; it slightly increases the amount of the perspiration, and thus may aid in counteracting an excessive elevation of temperature. With regard to its use in peritonitis Brunton says that "Opium, by its action on the vaso-motor centre, and by its action also on the peripheral terminations of vaso-motor nerves, will prevent or diminish the reflex dilatation of the vessels, which the local irritation would otherwise produce; congestion will thus be diminished, and inflammation will be relieved." The action of opium in peritonitis is, therefore, probably twofold: First, it lessens peristaltic movements of the intestines, and thus diminishes local irritation; secondly, it lessens reflex activity of the centres through which local irritation causes dilatation of the vessels, and thus it diminishes peritoneal congestion.

The unpleasant effect of opium and its derivatives upon the secretions has led me to combine with it minute doses of a drug at one time very generally used in the management of this disease, but latterly decried on all sides: I refer to a salt of mercury, the mild chloride being the form commonly employed. The physiological effects of mercury and its salts upon the saliva and the urine are directly antagonistic to that of opium, both of these secretions being increased by its use. By combining with our opiate a small quantity of calomel we are frequently enabled to avoid the furred tongue, the dry lips, the pasty and unpleasant taste in the mouth, that so frequently attend the employment of large doses of opium. Nor need there be much fear of ptyalism when the two drugs are combined, as each in a measure counteracts the effects of the other. It is certain that mercury is tolerated better and for a longer time when combined with opium than when given alone.

Upon the urinary secretion the action of the mercurous salt is no less welcome. With the diminution of the secretion and the blunting of sensibility in the bladder, and with the impairment of muscular strength in the wall of this organ from the existing inflammation of its outer tunic, the expulsion of the

urine is often effected with the greatest difficulty; at times, indeed, it becomes impossible. It is in relieving these symptoms that calomel often assists, especially when combined with digitalis in small doses.

It seems to me that calomel has yet another virtue that entitles it to particular consideration here, namely, its action upon the intestine and intestinal contents. It cannot longer be gainsaid that mercury and its salts in physiological doses act as cholagogues. As Brunton says in his admirable work upon pharmacology, "The real action of mercury as a cholagogue consists, not in its stimulating the liver to form more bile, but in removing more readily from the body the bile which is already present in excess." It appears to perform this function by stimulating the upper part of the small intestine, and thus causing the evacuation of the bile before time has been allowed for its reabsorption. The reasons for this supposition are: (1) That mercury is so beneficial in bilious disorders; (2) that it does cause the appearance of bile in the stools, for Buchheim has proved by analysis that the green stools which occur after purgation by calomel owe their color to bile; and (3) that in the stools passed after mercurial purgatives, leucin and tyrosin, the products of pancreatic digestion, have been found.

Now we know that one office of the bile is to promote peristalsis. If we can assist in regularly transmitting to the lower part of the intestine some of this fluid we counteract by just so much the obstinate constipation that, if too long continued, may in itself constitute a menace to the patient suffering from acute peritonitis. Bile also has a tendency to prevent decomposition of the residual alimentary mass, and it is assisted in this by the presence of mercury, which acts as a disinfectant of the intestinal contents. In peritonitis this tendency to decomposition is greatly assisted by the sluggish movement or inaction of the bowel, by the temporarily increased local temperature, and by the presence of a large amount of inflammatory fluid, and any remedy which can counteract this tendency is useful.

It has been my practice to combine one-tenth of a grain of calomel with each half-grain of morphine, and to continue the administration of both drugs until the bowels are easily moved. This result is generally obtained on the fourth or fifth day, when several stools are apt to follow in quick succession. Should the tendency to diarrhœa become annoying, the calomel is discontinued and the patient given a little of Hope's camphor mixture.

The only contraindication for the use of opium may be furnished by the condition of the kidneys. Chronic interstitial nephritis, so insidious in its onset that the patient himself has never received any warning of its presence, is very apt to be revealed by the excessive effect of a single moderate dose of an opiate. The tendency to uræmia seems to be favored, if manifested before, or even to be developed, when not previously indicated, by the use of opium. Even in peritonitis, where there usually exists so remarkable a tolerance for this drug, the ill effects have not been wanting; so that patients suffering from peritonitis, occurring in the course of chronic Bright's disease, have quickly passed into a state of uræmic coma, with no symptoms of narcotism, and have died comatose, without rallying from the first attack.

My preference for morphine has always been strong, and I am in the habit of giving it in the form of a standard solution in cherry-laurel water, one grain to the drachm. Of this solution a sixth, fourth, third, or half can easily be given, and the cherry-laurel water acts in part as a gastric sedative, preventing the tendency to vomit which morphine produces in some patients. Where this tendency nevertheless exists I have given the morphine by suppositories or have substituted codeine, which must be given in doses four times greater than those of morphine, but is easy to administer, and little likely to produce gastric derangement.

With symptoms that from the beginning are chiefly local, it is but natural that local measures should have early occupied a prominent place in treatment. The local application of leeches, the use of blisters and other powerful counter-irritants have had their place and are now, happily, no longer relied upon. Not so with topical applications intended, by their temperature, to influence the course of the inflammation. Cold applications, hot applications, turpentine stupes, flaxseed or other poultices have had their champions, and are still very commonly used. It is sometimes difficult to decide what form of application may be best suited to the individual case, but it is a safe rule, in every instance, to consult the comfort of the patient, and to let that influence the selection of hot or cold applications. All of these applications are open to one serious objection, namely, that they require to be constantly changed—the cold applications, lest they get too hot, the warm, lest they grow too cool; and in these frequent manipulations the tender abdomen is liable to fresh injury.

It was formerly the practice in acute peritonitis, when mercury stood high in favor as the preliminary step in all kinds of treatment, to apply freely mercurial ointment to the abdomen, the ointment being spread upon flannel or some other soft fabric and left in contact with the abdomen. In the reaction following the excessive use of mercury the drug in all its forms was practically banished from the materia medica, save for a few specific purposes, and

this use of it in peritonitis was banished with the rest. But the pendulum has swung a little too far in the other direction, and, I think, we must again return to many of the things that were found useful by our fathers in medicine. For the last three years every case that has come under my care, in hospital or private practice, has been treated by the free application of mercurial ointment over the whole abdomen. It has promptly relieved the feeling of rigidity and painful distention; the immediate effect has been cooling and pleasant to the patients and the tympanites has subsided as quickly as after any other local application. It constitutes a dressing that easily adapts itself to the shape of the abdomen; it does not annoy by its weight; there is no wetting of the bedclothes, and the patient is not disturbed for its frequent removal, the ointment being renewed but twice in twenty-four hours. In all of these particulars it possesses decided advantages over other local applications. The mercury is evidently absorbed very slowly, for I have yet to see a case of ptyalism from its use; and in many instances it has remained in contact with the skin for two or three weeks.

Of the individual symptoms but two require especial mention in connection with the treatment, namely, the vomiting and tympanites. The former, which frequently ushers in the whole train of symptoms, is often so severe at the outset as to suggest intestinal obstruction; yet it is promptly controlled, as a rule, by large doses of opium. When occurring later in the disease, cracked ice taken freely into the mouth, small quantities of iced champagne, alone or in combination with aromatic spirit of ammonia, or half-drop doses of creasote in emulsion of sweet almonds, usually succeeds in controlling the trouble. Champagne has the advantage of being a stimulant and at the same time a gastric sedative; it is readily taken by children as well as by adults, and its use can be continued through the entire course of the disease.

Tympanites is always present to a greater or less degree but rarely, except in peritonitis of septic origin, and especially in those forms incident to the puerperal period, does it become excessive. The abdominal distention may, however, attain such proportions that the upward pressure of the diaphragm becomes a dangerous impediment to the circulation and respiration, and calls for immediate relief. A rectal tube carried high into the bowel, and left there, may accomplish all that is necessary; but this result cannot be confidently expected, since the gaseous distention is found mainly in the small intestine. Under these circumstances it has been recommended to puncture the bowel with a hypodermic or aspirator needle through the abdominal wall. I cannot regard such a plan as wholly devoid of danger, and should resort to it only in extreme cases, selecting a needle of the smallest calibre to be found. It is true that puncturing a healthy bowel is a matter of very little moment, since the muscular layer quickly contracts about the minute orifice, thus preventing the escape of liquid or gaseous intestinal contents; not so when puncture becomes necessary as a curative measure. Is not the tympanites itself evidence of paralysis, or great loss of tone of the bowel; and would not the increased pressure within the intestine tend to favor the escape of some of the intestinal contents as soon as the needle is withdrawn? Such considerations call for the exercise of the greatest care and discrimination with regard to this step.

The diet should be liquid, easily assimilated, and of a kind likely to leave but little residue. Some form of peptones, or peptonoids, now readily obtained, or, if need be, prepared by artificial digestion, constitutes at once a palatable drink and a food. A little alcoholic stimulant, brandy or whiskey, may be added from the first, and will help to sustain the patient. There should be plenty of fresh air, with a limited number of attendants. Above all I would enforce rest and quiet; and the constant stream of visitors that besets so many a sick-room is to be wholly interdicted.

I have made no reference to surgical measures, because I have been here dealing with what is known as acute idiopathic peritonitis, and surgical treatment is never called for in this disease, unless the case ends in abscess or diffuse suppuration. But with prompt resort to the treatment as here outlined such a termination is unlikely; and even in many of the secondary forms, occasioned by typhlitis or perityphlitis this treatment will obviate the necessity for an operation, which, however brilliant its results, is yet a very grave step for the patient, and not to be undertaken rashly. Despite the almost reckless manner in which the peritoneum is now treated by surgeons, we have the opinion of so brilliant and renowned an operator as Schede, advising against surgical intervention in peritonitis, simple or acute, and in perityphlitis during the height of the process, unless it can be pretty clearly shown in the latter case that perforation and a distinct tendency to sacculation exist.

The treatment of chronic peritonitis need occupy us but briefly. It may, indeed, well be questioned if such a disease as chronic peritonitis ever occurs, excepting that due to tubercular or cancerous infiltration. In both of these conditions supporting treatment, fresh air, good hygienic measures, and, in case of tubercular disease, the selection of a suitable climate, indicate the extent of the physician's power.

In cases of tubercular or cancerous peritonitis it frequently becomes necessary to interfere, by surgical

means, owing to great distention of the abdominal walls by fluid effusion. The operation of tapping is the classic remedy for this condition, but abdominal section, in the tubercular variety, seems to promise better results, as by means of it some cases have been cured. It is a question for pathologists whether these cases have really been tubercular in character, or whether the miliary nodules may not have been of the character of the tumors described as endothelioma, of which the peritoneum is the most frequent seat. At all events, we have not had records of every case successfully treated by incision, in which an autopsy subsequently revealed the return of the affection, nor can we understand from carefully-acquired knowledge of the life and habits of the tubercle bacillus how the mere exposure to the air for a few moments, and the contact with a warm solution of boric acid or plain boiled water, should permanently alter the conditions upon which its vitality depends. This question trenches, however, on the surgical aspects of the disease.

I am well aware that there can be no claim of novelty in the treatment here outlined, but it is sometimes desirable to burnish our old silver, and let the treasure appear in its true light.

THE EMPLOYMENT OF SPANISH MOSS (*TILLANDSIA USNEOIDES*) AS A SURGICAL DRESSING.

BY LOUIS McLANE TIFFANY, M.D.,
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THE holding of raw surfaces in accurate apposition, the abolition of dead spaces, and the exercise of physiological pressure over a wounded area, are essential to rapid healing. To abolish dead space and exert the proper amount of pressure is not always easy and is largely dependent on the material used as a dressing. During the early spring of 1889, when on a plantation in Louisiana, it occurred to me that the moss which hung from the trees would be a soft and elastic wound-dressing, so I brought some home with me. I found later that it could be obtained in a sufficiently clean condition at any upholsterer's, and since the date mentioned I have continued to use it with great satisfaction.

The moss, which hangs in festoons from the branches of trees throughout the Southern States, is of the pineapple family—sub-order, *Tillandsia;* species, *usneoides*. Stems thread-shaped, branching and pendulous; leaves thread-shaped; peduncle short; one-flowered. (Gray.) On the trees it is of a gray color, very curly, and is prepared for commerce by being dried and beaten so as to free it from bark. After this process it appears to consist of black, elastic, tough fibres, resembling curled hair.

I usually have the moss made into cushions or pads of about six inches by four inches, and two inches thick, cheesecloth being the material employed as a covering. The pads have been made of other dimensions; in one or two cases of mammary extirpation with extensive axillary dissection, pads large enough to envelop nearly one-half of the thorax were employed, but I find no advantage in the use of such large cushions, and the size given has proved very generally applicable.

The pads are adjusted outside of a gauze-and-cotton dressing, and the bandage applied snugly, the elasticity of the moss serving to distribute the pressure evenly. About the chest wall, as after a deep axillary operation, I have been especially pleased with the pads. A fact of a good deal of importance is that when exposed to the action of moist heat in a sterilizer the moss remains elastic, so that the cushions are prepared with the other dressings for each operation.

AN ADDITIONAL NOTE ON THE EMPLOYMENT OF ANTIPYRINE IN PERTUSSIS.[1]

BY J. P. CROZER GRIFFITH, M.D.,
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Two facts are to be prominently borne in mind in the employment of any drug in the treatment of disease. First, that no method of treatment is infallible, and that every drug will at times fail to produce the desired effect. Second, that success will sometimes depend on the adoption of *prudent courage*, and that a medicine should not be condemned as useless unless we are sure that it is the drug itself, and not the method of its employment which is at fault.

Soon after Sonnenberger's announcement[2] of the value of antipyrine in the treatment of whooping-cough, and stimulated thereto by his experience, I published[3] the reports of a number of cases treated in this way. Many of these proved that the drug is capable of exerting a very powerful influence upon the course of the affection. Since that time I have used the remedy in many cases, and usually with more or less improvement in the condition of the patient. In some instances the disease was favorably influenced in a remarkable manner, the paroxysms being greatly reduced in frequency, or in intensity, or in both. A large number of cases have been under my observation, however, in which this plan of treatment, now so generally in favor, was totally without effect, although as large doses were employed as I have, as a rule, found useful.

It has usually been my custom to begin the treat-

[1] Read before the Philadelphia County Medical Society, November 26, 1890.
[2] Deutsch. med. Wochenschr. 1887, 280.
[3] Therapeutic Gazette, February, 1888.

ment with 2 grains of antipyrine, given every three hours, in patients two years of age, or from 3 to 4 grains at four years of age, and to increase this somewhat if necessary. These doses seem at first sight somewhat large, but it is, I think, certain that children bear drugs of the antipyretic series much better, and in much larger doses, than do adults, whether in febrile or afebrile states. I have never seen bad results follow these doses, and believe that much larger ones could sometimes be employed with advantage in bad cases. It is possible that some of the patients whom I have recorded as unyielding to this form of treatment would have been relieved by a more heroic dosage. At any rate, it is beyond dispute that many of those physicians who have reported adversely regarding the administration of antipyrine in whooping-cough have erred in the manner of administration. In a very severe and fatal endemic outbreak which occurred in an institution in this city within the past few years, infants received an amount which could only be considered useless, and as no fair test of the value of the drug. Of course, in the instance referred to it was without effect. Quite recently, in another local outbreak, children of from two to nine years of age were given only from 1 to 2 grains three times a day, and were, of course, entirely unrelieved by it; the remedy consequently being regarded as useless in the treatment of whooping-cough.

I am led to report the following case because several physicians of my acquaintance, who have had a large experience in the diseases of children, have failed to obtain satisfactory results from antipyrine in the affection under consideration; and the suspicion has arisen in my mind that the failure was, perhaps, due to an improper method of administration. The case is an instance of the advantage of a bold trial of large doses after small ones had proved useless:

Katie McD., four months old, only fairly well nourished and rather feeble, was brought to the Out-patient Department of the Children's Hospital, May 6, 1890. She was said to have been coughing for four weeks (although the exact time was uncertain), and was growing worse. It seemed that she was certainly approaching the height of the disease. The paroxysms were very frequent and very severe. As the child was evidently severely sick, and demanded vigorous treatment, this was commenced by giving ¾ grain of antipyrine every three hours; although this dose was so much larger than I had been in the habit of giving at this age, that I confess I was somewhat anxious lest the amount should prove injurious.

May 10. The child was no better, and was now having attacks of intense cyanosis and loss of breath after the paroxysms. These were so severe that the mother feared the child might die in one of them. As the antipyrine seemed to have failed to relieve, and as the mother was prejudiced against it, my assistant in my absence replaced it by extract of belladonna $\frac{1}{15}$ grain, alum ½ grain, whiskey 30 drops every three hours.

19th. The attendant at the clinic rushed excitedly into the room, followed by the mother with the child in her arms. It had just had a severe paroxysm, and was, when seen, deeply cyanosed, entirely unconscious, and with its head hanging forward on its chest. Respiration had entirely ceased. The child was in fact apparently dead, and I feared that it was actually so, for only after some moments could respiration be induced. The mother reported that the child had been much worse, and had been having attacks similar to, though probably not so severe as this, every quarter-hour or half-hour during the preceding night. She was evidently much feebler, and the prognosis was most unfavorable. In truth, I never expected to see the little girl alive again. Feeling that treatment had been absolutely without service, and that nothing but the most energetic and rapidly-effective remedies could save the life of the patient, I returned to antipyrine, increasing the dose to *1 grain every three hours*, believing that if the medicine did not kill the patient the disease certainly would.

21st. The mother returned to the clinic with the little patient lying quietly asleep in her arms. The thought arose that she might be too depressed by the drug, or by the exhaustion from coughing, to stir, but inquiry showed that her strength and liveliness were greatly improved. During the remainder of the day of her last visit, May 19th, the cough did not improve. On May 20th she was still coughing, but evidently with much less severity, for there were no attacks of cyanosis. During the night of May 20th the child *had not coughed at all* until five o'clock in the morning, and from that time until seen in the clinic (after 11 A.M.) *there had been no paroxysms whatever.*

28th. The medicine was administered until May 25th. The child then whooped about four or five times a day, and slept at night.

This case is, of course, a remarkable one, and such sudden and complete recovery from so desperate a condition will probably seldom be observed under any method of treating pertussis. The treatment was heroic, but necessarily so. Antipyrine given in doses of this size cannot be without danger, and such doses are not to be generally recommended. Nevertheless it seems hardly questionable that in cases of life or death it is better to dare than to watch inactively our patients die. That large doses of antipyrine will save the life of every patient with whooping-cough is not to be expected, but that it may be of the greatest benefit to some is proved by this case. The drug may be expected at least to mitigate the intensity or the frequency of the paroxysms in a considerable proportion of cases. I have known it relieve children who were rapidly losing ground on account of inability to retain sufficient food to nourish them, and to relieve them to such

an extent that they promptly regained strength. In some instances, as in this, the disease, while in the full vigor of the second stage, was either entirely, or almost entirely, checked. The administration of the remedy should be commenced in full doses and gradually increased, bearing in mind that though depression, and even collapse, may occur, yet the probability of these is exceedingly slight in afebrile cases as compared with the danger of it in febrile conditions.

TIN PLATES IN THE TREATMENT OF INDOLENT ULCERS.

BY E. R. MORAS, M.D,
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ULCERS are perhaps the most tedious and unsatisfactory cases in minor surgery that the physician is called upon to treat. Although this applies more particularly to varicose ulcers of the leg, yet one meets with ulcers in other localities, and of different origin, which are very difficult to heal, such as many of the ulcerated surfaces remaining after freely-incised septic wounds of the hand, arm, foot, or leg, after suppuration following amputations, and, in fact, after any wound, accidentally or intentionally inflicted, in which the granulations from lowered vitality of the tissues fail to cicatrize.

The various methods of treating indolent ulcers, and the remedies used both in and out of the profession, are surely too numerous to mention, but they can be generalized thus:

1. The moist treatment: Ointments, pastes, washes, wet antiseptic dressings, etc.

2. The dry treatment: Iodoform, iodol, boric acid, oxide of zinc, bismuth, and other powders.

3. Compression: Flannel bandages, rubber bandages, adhesive plaster, and silk elastic stockings.

These may be considered the usual methods. In addition rest of the part is sometimes enforced.

4. Skin-grafting: Small grafts repeatedly applied, or large grafts, after the method of Thiersch.

5. Transplantation of a flap.

6. Tin-plate treatment.

The latter mode of dealing with ulcerated surfaces is probably a novel one to many, and in this paper the writer will claim that in ulcerated wounds, which do not heal kindly, the tin-plate treatment is more certain, more satisfactory, and less tedious, and effects quicker results, than the first three methods of the foregoing summary, and that it is much simpler and more generally applicable than the fourth and fifth methods. And this is claiming only what is proven by facts. Of the cases which were thus treated I will report two—one a hospital case, the other a case in private practice:

CASE I.—L., a man aged about fifty years, who I saw a year and a half ago in the Cook County Hospital, Chicago. He was the first patient on whom the experiments were conducted. Each leg was the seat of an extensive, irregularly-shaped, foul ulceration, the results of a burn received two years before. One ulcer covered nearly one-third of the leg between the ankle and the knee. All forms of treatment had been tried for two years. To judge better of the effects of the tin plate I applied it over only a portion of one ulcer, selecting for the purpose the least promising one, situated over the inner aspect of the tibia. The remainder of the ulcer was treated with powdered iodoform. Four days later the dressings were removed, and the difference between the granulations covering the area over which the tin plate was used and those on the remaining surface was surprising. The former were smoother, cleaner, and healthier in appearance.

I now applied the plate over the entire surface of both ulcers. One week later the dressing was renewed, and an addition of one-fourth of an inch of new epidermis around the ulcer was found. Intervals of nine and ten days elapsed between this and the next two dressings, and finally the plate was left on for two weeks twice in succession. The smaller ulcer was then completely healed, and of the other a spot scarcely as large as a silver half-dollar remained. Satisfied that this would heal in a week or two, the patient asked to have the tin plate reapplied, and to be given his discharge.

CASE II.—A. L. received an injury to the left leg some twenty years ago, resulting in a chronic ulcer, which has since been almost constantly "running," and caused frequent disability. His occupation compels him to be on his feet during working hours.

When he submitted himself (which he did with great misgivings) to the tin-plate treatment, the leg was decidedly œdematous, excruciatingly painful at the ankle, and presented two scooped-out, gangrenous ulcers, measuring respectively 1⅛ by 1¼ inches, and 1¼ by 1 inch.

Simple washing with a 1-to-1000 bichloride solution was used, and the tin plate applied—the patient going to his work as usual. Four days later the sloughs had separated, and were removed with ease, the base of the ulcers already showed signs of activity, and their margins revealed a faint attempt at epidermization. In five more days the bases had attained the level of the skin, a decided growth of skin had taken place, there was but little œdema, and the pain had entirely disappeared. The dressings were subsequently renewed every sixth or seventh day, and both ulcers were found completely healed by the fifth week, the patient having lost not a single day of work.

REMARKS.—In the first case, ulcers which for two years manifested no inclination to heal under other forms of treatment disappeared under the use of the tin plates, and the time occupied in healing (about two months) was short enough to meet the most sanguine expectations. I may here remark that in this case Thiersch's method would have been at least partly a failure, owing to the condition of that

portion of the ulcer corresponding to the inner aspect of the tibia, for there could be no hope of grafts "taking" upon that area until some means had been devised to cover it with fresh, healthy granulations.

In the second case healing progressed without interruption *while the patient followed his usual avocation.*

From both of these cases we may infer that no operative procedure is required, and the annoyance of frequent dressings may be done away with.

Now, as to the details of the treatment. Bichloride of mercury solution, 1-to-1000, oiled silk or rubber-tissue protective, common sheet tin, surgeon's adhesive plaster, dressing material, and bandages, are required.

FIG. 1.

With ordinary strong shears cut a piece of tin corresponding to the shape and size of the ulcer, but large enough to overlap one-fourth of an inch of the surrounding skin. Slightly evert the sharp edge of the plate, and cut a piece of oiled silk or rubber-tissue protective, of the same size. These are placed in the bichloride solution. The ulcer and surrounding surface are washed with bichloride solution; the protective is then placed over the ulcer, the tin plate over the protective, and firmly fixed with adhesive strips. Be careful that the plate is adjusted with uniform pressure.

It is best not to encircle the part with the strips of plaster, which would interfere with the circulation, and, as happened in my first case, produce a new wound by the adhesive strips cutting into the integument. As a rule, only a light dressing, such as one of gauze, is necessary, for when the secretions are profuse the patient himself may be allowed to renew the outer dressing every second day, and wash away the offensive discharges surrounding the tin plate with plain warm water, or an antiseptic solution.

No preparatory treatment of the ulcer is needed, unless the granulations are unusually elevated above the skin, when they may be levelled by one application of lunar caustic.

The primary dressing should be renewed on the fourth or fifth day after its application. Owing to the effects of the pressure the ulcer may seem larger than before, and, according to the former character of the granulations, it is found covered with a thin layer of creamy exudate or with a layer of slough. Even if the ulcer was formerly very indolent, it will already show signs of physiological activity; new, healthy granulations will be seen here and there, and on close observation a narrow border of very delicate

FIG. 2.

bluish-red epidermis may be seen creeping over the periphery of the wound, while the skin immediately surrounding it appears whitish and spongy. The same process continues between subsequent dressings, the granulations assuming a healthier appearance and activity, and epidermization advancing more rapidly.

When the ulcer is entirely healed it is advisable to reapply the tin plate for a week longer, that the delicate centre may have protection while it is becoming firmer. In cases which require it an elastic stocking of flannel bandage should be worn during the day as long as necessary.

The same piece of tin is used throughout the treatment, and is trimmed to meet the requirements of the varying size and shape of the ulcer. The first two, or possibly three, changes of the primary dressing are made at intervals of four or five days, after which it will seldom be necessary to change oftener than every eighth, ninth, or tenth day.

The good results will vary with the care and judgment used in fitting and fastening on the plate. Apply it snugly, and in such a way that the movements of the part will not displace it. Be careful that the edge of the tin is properly everted.

The tin and oiled silk, or rubber-tissue, might be perforated. I used them thus in the hospital, but not often enough to notice any special benefit resulting therefrom.

Were I to state the varieties of ulcers in which this plan of treatment gives the most satisfactory results, I would say that in varicose and other ulcers of the leg, in ulcers about the feet, hand, arm, and in amputation-stumps, it has given satisfaction.

The *modus operandi* of the tin plate in promoting the healing of indolent ulcers, which I have outlined for myself, may be an incomplete one. Some of the peculiarities of these ulcerations are: (1) That the granulations are raised above the level of the adjoining skin, which cannot creep over them; or, (2) the granulations are depressed below the skin, and lack the vitality necessary to fill the hollow; or, (3) they are constantly bathed in a profusely foul discharge; or, (4) they are wanting in the proper stimulation that would enable them to accomplish their physiological purpose. It would seem that the tin plate remedies these defects in two ways, namely, as a stimulant and as a compressor. Being a smooth foreign body it acts as a gentle stimulant, and, by compression, it prevents profuse oozing, and keeps the granulating surface to the exact level of the skin, or the skin to the level of the granulations, and thus affords the epidermis an opportunity to spread over the ulcer.

TWO CASES OF PROSTATECTOMY.

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DR. BELFIELD'S original operation, followed by Mr. McGill's admirable work in the removal of portions of the prostate in those cases in which catheterization has become impossible, or has ceased to give relief, and in which cystitis has developed and septicæmia or uræmia is imminent, have attracted the attention of surgeons everywhere, and vastly increased the number of cases submitted to similar operative procedures. It is, therefore, of special importance at this time that all such cases, with their results, favorable or unfavorable, should be published, in order that we may arrive, as soon as possible, at some definite conclusion as to the indications and contra-indications, as well as to the scope and limitations of this operation, so exceedingly important on account of the large number of men who are the subjects of prostatic hypertrophy, and because in aggravated cases the suffering is so great and the disability so complete. For these reasons I desire briefly to place upon record the following cases:

CASE I.—I. S., aged sixty-eight years, white, a hotel-keeper; family history of tuberculosis; always a moderate drinker, recently intemperate, Urinary symptoms began sixteen years ago; catheter has been required at intervals for eight years; for four years he has been unable to urinate at all without catheterism. Pain in hypogastrium has been progressively increasing until now it is constant and excruciating; pain is also felt at the end of the penis and in the rectum. He has lost flesh rapidly, having gone down from about 170 pounds to 120 pounds. Is sallow and pinched in appearance; has chronic bronchial cough; eats and sleeps poorly. Urine scanty (20 ounces in twenty-four hours) and loaded with pus and vesical débris; contains hyaline and granular casts. Physical examination *per rectum* reveals a prostate enormously enlarged both laterally and longitudinally, the finger being unable to reach its upper limit. The bladder contains a soft phosphatic stone of medium size. Mitral murmur of heart; bronchial catarrh, with evidence of beginning consolidation at left apex.

The case seemed very unfavorable, but the patient's suffering was so great, and his condition so steadily deteriorating, that it appeared to be justifiable to run considerable risk in attempting to relieve him. An operation for the removal of the calculus at least was clearly required. Litholapaxy was slightly contra-indicated by the intense cystitis which existed, and by the probability of recurrence, as the calculus was phosphatic, and strongly by the fact that the retention would remain unrelieved. Perineal lithotomy was negatived on account of the size of the prostate, and because of the very insufficient digital exploration of the bladder which it would permit.

Suprapubic lithotomy was therefore decided upon. The question of further operative interference, in case it was found practicable, with the object of removing the obstruction, was then submitted to the patient, with a fair statement of the attendant risks, which he promptly decided to accept.

The patient was carefully prepared by rest in bed, milk diet, attempted sterilization of urine by boric acid administered both by the mouth and by vesical irrigation, full doses of quinine, etc. At the time of operation the bladder was rendered accessible and opened in the usual manner. An oval rectal bag was used, and filled with eight to ten ounces of water. Ten to twelve ounces of warm boric-acid solution were injected into the bladder, which was reached by a linear incision three and a half inches long just above the pubes. The walls were transfixed with silk threads held by an assistant. The stone, which lay in the bas fond, crumbled down under the touch of the forceps, and had to be removed by the finger and a scoop. It was then found that both the middle and lateral lobes were greatly enlarged and projected far into the bladder. The mucous membrane at places was snipped through with scissors, and the major portions of the projection removed by enucleation with the finger.

This required the exercise of only moderate force, and was not attended by any considerable hæmorrhage. The pieces removed, eight in number, varied in size from a hickory-nut to a large walnut, and weighed three ounces. A large drainage-tube was inserted into the bladder and held in place by a stitch through one wall of the wound. A suture was inserted at each angle. The patient was returned to bed, with the wound dressed, fifty-five minutes after the incision was made, some delay having been caused by the difficulty in extracting the fragments of calculus from the deep parts behind the prostate. He was moderately, but not dangerously, shocked, and in ten hours had a normal temperature and a pulse of 100.

For three days the outlook was most favorable. There was not a single alarming symptom. The temperature reached 100° once on the second day, but fell again to normal, and subsequently was normal throughout with the exception of a few hours on the fourth day, when it again rose to 100°. Milk was taken freely, the patient was rational and comfortable. About the middle of the fourth day, however, he suddenly developed a maniacal delirium with excessive restlessness, wakefulness, jactitation, etc. He obstinately refused food, took off dressings when he had an opportunity, and had to be kept in bed by force. His tongue became dry and dark, and his pulse increased in frequency, but there was neither chill, sweating, nor rise of temperature. The urine continued to flow from the wound, which was irrigated daily with boric acid, with listerine, with phénol sodique. Various sedatives and hypnotics were used without effect, attempts at stimulation were equally useless, and the patient finally passed into a condition of stupor and died seven and a half days after the operation.

The following are the notes of the autopsy: Man, five feet seven; emaciated, pallid. Wound, two and one-half inches long in the linea alba, extending upward from symphysis pubis. Walls healthy, granulating. Genito-urinary organs and rectum removed together. Bladder shows granulating surfaces where portions of prostate were removed, but these are much smaller and much less noticeable than might have been expected. Lower portion of prostate and wall of bladder intact. No injury to recto-vesical septum or to urethra. No other foci of suppuration or ulceration present. Bladder capacious and moderately hypertrophied. Ureters distended to nearly the size of the wrist. Kidneys almost completely disorganized, containing multiple purulent collections, showing scars of previous abscesses, and rendered almost useless by chronic nephritis, scarcely any secreting structure remaining. Abdomen, organs healthy. Thorax, tubercular changes in both lungs. Cranium not opened.

REMARKS.—As I look back upon the case I may make the following criticisms of my own course:

1. It would have been wiser in the presence of scanty urine, tube-casts, and rapidly-increasing emaciation, and with a history of sixteen years of obstructive disease, to be content with supra-pubic lithotomy and permanent drainage. In only one of Mr. McGill's twenty-four cases had the symptoms extended over sixteen years or more. In that case only a portion of the prostate the size of a pea was removed, the patient was not much relieved at the end of six weeks, and his further history was not traced. The next case in order of duration of symptoms had extended over fourteen years. Three portions the size of a bean were removed. The patient died the following day. His kidneys were healthy. None of the other cases approached these in length of continuance of urinary symptoms. It may certainly be assumed that the possibility of the existence of serious disease of the urinary tract above the bladder increases in every case in a direct ratio with the duration of obstructive disease anterior to that organ. Indeed, we know that even frequency of micturition is of itself a competent cause of ureteral dilatation, hydro-nephrosis, etc., and when to these factors are added such grave vesical changes as occur in these cases, it becomes a matter of astonishment that healthy kidneys are ever found in these patients.

2. I should probably have used chloroform instead of ether in view of the renal disease which I knew to exist, and which might have been fairly supposed to be extensive. It will be noticed that death did not occur from any form of septicæmia or pyæmia. It was undoubtedly uræmic, and it may have been hastened or precipitated by the employment of 10½ ounces of ether, many of the recorded ether-deaths having occurred in patients with chronic nephritis.

3. After the prostatectomy was decided upon and was begun, I might perhaps have been content with a much less thorough and extensive operation. Just here is emphasized the need of a large collection of similar cases reported in considerable detail, such as is now being made by Dr. Belfield.[1] I did not know then how much of the projecting prostate it was necessary to remove to insure subsequent spontaneous evacuation of the bladder. The risk of hæmorrhage, of shock from prolongation of the operation, of septic trouble from a larger absorbent surface, are all directly increased with the amount of the prostatic overgrowth which is removed, and it will be quite important in the future to know how little we may do with a reasonable prospect of resulting benefit.

In none of Mr. McGill's cases, where the weight of the portions removed is given, did it reach three ounces. In one both lateral lobes were removed in seven pieces, weighing two ounces and thirty grains.

[1] Since writing the above, Dr. Belfield's summary of cases has been published, and cannot fail to help us greatly in the attempt to arrive at definite conclusions as to the indications for and the value of the operation.

The patient died some months later. In another the piece removed weighed two ounces and forty grains. The patient died in thirty hours. We have not even now enough cases to generalize from, but it is significant that of the three deaths in Mr. McGill's table directly due to the operation, one was in a patient who had had symptoms for fourteen years; two underwent the removal of *large* portions of the prostate; and all three had bladders with thickened and hypertrophied walls. It is probable that we will find in these facts a valuable guide to our future work in this direction.

CASE II.—A year ago, discovering a small, hard stone in the bladder of a gentleman sent to me from a neighboring city, I advised median lithotomy. The patient was forty-three years old; had been a free liver; came from a gouty family; had had gonorrhœa twice in his youth, and with one case had an attack of acute prostatitis as a complication. He had a urethral stricture, calibre 23 French (normal calibre about 32), four and one-half inches from the meatus. His urinary symptoms had for years been referred to that, and he had never before been examined for stone. On introducing the vesical sound I had some difficulty in passing it through the prostatic urethra, but as he was hyperæsthetic and very nervous, I was not clear as to the cause. Examination *per rectum* disclosed a prostate which I noted at the time in my case-book as "very moderately enlarged, but distinctly indurated." His urine showed quantities of pus and phosphates and oxalates in great excess, but there were no tube-casts. I advised lithotomy on account of the existence of the stricture, the presence of the cystitis, and the hardness and small size of the stone, which was presumably a mulberry calculus. Measurement by introduction of a very small lithotrite (child's size) showed that the stone was not more than a half to three-quarters of an inch in diameter, and confirmed the impression of its density given by the sound. The passage of the lithotrite was likewise difficult, gave rise to extreme pain, and was followed by profuse bleeding—facts which also influenced me in my selection of lithotomy, the small size of the stone leading me to choose the median variety of that operation.

A few days later, after the usual preparatory treatment, I cut him at his home. As the knife passed from the membranous to the prostatic urethra I remarked upon the almost cartilaginous density of the tissue through which I was cutting, and upon the great increase of the "perineal distance"—the distance from the junction of the membranous and prostatic urethras to the most distant point of the median enlargement within the bladder.[1] This distance, I should think, was not less than three and one-half inches, and it was only by having the hypogastrium strongly depressed that I could reach the bladder with the tip of my middle finger. A small pair of forceps was introduced, and after a little difficulty the stone was caught and extracted. Further digital exploration showed that the middle lobe of the prostate was enlarged, distinctly pedunculated, and projected directly upward. I seized this projecting portion, which was really intravesical, first on one side of my incision and then on the other, with strong forceps, and by dissection with my finger-nail, and by dragging and twisting strongly with the forceps I succeeded, with some trouble, in removing two small particles, each the size of a hickory-nut, and looking to the naked eye, and on section with the knife, not unlike scirrhous carcinoma. As the patient bled freely, and the separation of the fragments required the use of so much force, and as I had not discussed with him or his family the propriety of any operation except that of lithotomy, I decided to refrain from further interference. I did so, however, without much hope of having given him permanent relief from his urinary symptoms.

The specimens were submitted to Dr. John Guitéras, Professor of Pathology in the University of Pennsylvania, who reported the growth as "a pure fibro-myoma with no admixture of suspicious elements of any sort." The patient convalesced without a bad symptom, and was out of bed with the wound healed in two weeks. He was in my office within a few days on account of a recent urethritis, and reports himself as free from all vesical symptoms.

REMARKS.—In this case, as I saw the patient but once before the operation, I neglected to inquire into the existence of residual urine. The absence of any lateral prostatic overgrowth, as revealed by rectal touch, prevented me from attaching much importance to the prostatic hardening which I did feel. The difficulty in the introduction of instruments seemed sufficiently explained by the great sensitiveness of the patient and by possible urethral and prostatic spasm dependent on the stricture and the calculus. If it had not been for these circumstances I would doubtless have discovered the prostatic growth earlier, as I was, of course, aware that intravesical growth sufficient to cause marked urinary symptoms frequently exists without any appreciable enlargement toward the rectum. I am not at all sure, however, that such a discovery would have been to the advantage of my patient. If a prostatectomy in addition to a lithotomy had entered into my calculations I would probably have selected the suprapubic route for the performance of both operations. Indeed, after having made the median incision and discovered the depth of the perineum I would have been justified, according to excellent authority,[1] in employing hypogastric section and cystotomy then and there. I could by no possibility, however, have had a better result.

Perineal prostatectomy as an accidental or inter-

[1] Watson: The Operative Treatment of the Hypertrophied Prostate.

[1] Watson: loc. cit. Belfield: American Journal of the Medical Sciences, November, 1890.

current complication of perineal lithotomy has been known since the days of Fergusson, and has never had a large mortality. Its usefulness, however, is confined to the class of cases like this one, in which the obstructive cause consists of an enlarged and pedunculated middle lobe. The other varieties described by McGill (and by Brodie, Cadge, Thompson, and others before him), viz, the collar enlargement, the hypertrophy of the lateral lobes, or of either of them alone, or the hypertrophy of all three lobes, are unquestionably to be dealt with most satisfactorily by suprapubic cystotomy; but it must be noted that the latter operation has a mortality of 16 per cent. as against 9 per cent. by the perineal method.[1] It seems to me that one explanation of this fact lies in the comparatively moderate interference with the prostate which this method permits of. I feel sure, at any rate, basing my opinion on general surgical principles, that some of the recent teaching on the subject touches too lightly on the increase of danger which must necessarily be associated with more extreme removals of portions of the prostate. Belfield, speaking of the possibility of return, says, for example:[2] "An important deduction from these considerations is the indication for thorough enucleation of all circumscribed masses within as well as above the general prostatic surface. Such tumors can be enucleated with surprising rapidity." "An important advance in the removal of prostatic obstructions is the enucleation of all accessible masses in the substance of the organ instead of a simple levelling off, etc." McGill[3] and Mayo Robson[4] write in the same vein. I believe in the future of the operation, and think that in carefully-selected cases it is likely to have a progressively smaller mortality, but I do not think it one to be undertaken lightly, and I am quite sure that it is not proper to adopt it as a routine method of treatment in all prostatics.

A considerable proportion of patients with obstructive prostatic enlargement can be made perfectly comfortable by the use of a Nélaton or Mercier catheter, provided the instrument is scrupulously sterilized before and after each introduction. It should be employed by the patient himself from one to three times daily, according to the amount of residual urine. Such patients may go on for years in this manner with little or no difficulty, and do so with increasing frequency since the importance of urinary antisepsis has been realized and its details perfected. In spite of every precaution, however, a number of cases break down, the catheter cannot be passed without distress, or without causing troublesome bleeding, or occasionally cannot be passed at all. The urine becomes ammoniacal and stinking. Vesical tenesmus is constant and severe. These are the symptoms which, above all others, indicate the performance of prostatectomy, viz., difficult and painful catheterization and the occurrence of marked and persistent cystitis.

In the presence of those symptoms, in a person of average strength and vitality, the surgeon should, in my judgment, proceed in one of the two following ways:

First: Introduce Syme's staff into the bladder, and make a small incision through the perineum and the membranous and prostatic urethra. Introduce the finger into the bladder. If a pedunculated middle lobe is found, enucleate it with the finger, or twist it off with forceps, as in the above case. Put in a large drainage-tube, and allow it to remain for a week or two.

Or, second, make a suprapubic cystotomy, remove only such portions of the prostate as are manifestly obstructing the urethral orifice, and then if the urethra is not free complete the operation by doing an external perineal urethrotomy.

Statistics are not yet numerous enough to allow us to be dogmatic as to the relative merits of these plans, but I am inclined to think that in the majority of cases the second is the one to be preferred.

In cases markedly feeble, and especially in those with chronic nephritis, it is best to be content with establishing perineal drainage.

[1] Belfield, loc cit. [2] Loc. cit.
[3] British Medical Journal, October 19, 1889.
[4] Ibid., March 9, 1889.

HOSPITAL NOTES.

CYSTITIS.

Abstract of a Clinical Lecture delivered at the Chicago Policlinic.

BY WILLIAM T. BELFIELD, M.D.,
PROFESSOR OF SURGERY.

DR. BELFIELD presented six cases which were sent to him with the diagnosis of cystitis, but which illustrated the fact that cystitis is a secondary affection, and that therefore the first step in the treatment must be a search for the cause, that is, the primary morbid process. We should remember, he said, that cystitis is—like jaundice and dropsy—a result, a symptom of disease, and not the primary disease itself; and that the cause of the trouble may be found anywhere in the urinary tract from the meatus to the capsule of the kidney.

CASE I.—A robust man, twenty-one years old, who had had for the past six months gradually-increasing frequency of, and pain during urination. He now evacuated the bladder every hour, day and night, the act being accompanied with pain along the entire urethra. On standing, the turbid urine deposited a slight amount of pus.

Examination excluded morbid conditions of the meatus and prepuce, stricture, and stone. The right epididymis presented, however, a hard, painless swelling, in places distinctly nodular, a condition which the patient

first noticed nearly three years ago. This swelling was evidently tubercular, and gave a clue to the cause of the cystitis, the tuberculous process having doubtless found a foothold at some point in the genital outlet near the bladder.

Upon rectal examination a distinct hard thickening near the right seminal vesicle at the apex of the prostate was found. The process probably extended to the vesical surface of the prostate, where it could be recognized by means of the cystoscope.

CASE II.—A man, fifty-five years old, whose symptoms dated back one year. After the patient had urinated Dr. Belfield introduced a soft catheter and withdrew one ounce of residual urine. Rectal examination showed an increased vertical diameter of the prostate. This case was evidently one of chronic retention from prostatic obstruction.

CASE III.—A man of thirty-five years, with a history of cystitis for three years. Examination of the pelvic and external organs was negative, but a hard painless body was discovered just below and adjoining the right kidney. The disease was tuberculosis of the kidney, and illustrated the fact that symptoms of cystitis are frequently produced by morbid conditions of the pelvis of the kidney.

CASE IV.—A boy of nineteen years, who was sent to Dr. Belfield eight weeks previously with the history that for six years he had usually been obliged to urinate at least once every hour, though occasionally enjoying a respite for a few days. His urine contained a small amount of pus. A sound entered the urethra to the prostate without obstruction, but was stopped in the prostatic urethra, as determined by the finger in the rectum. No instrument could be made to enter the bladder except a small flexible bougie. Perineal urethrotomy was performed, and the obstruction found to be a hypertrophied prostatic ring (internal sphincter), an unusual condition in young men. The body of the gland was not enlarged. The constricting ring was thoroughly stretched with forceps and with the operator's fingers.

The patient stated that since the operation he has been able to retain his urine for from three to five hours without discomfort, and has gained fifteen pounds in weight and feels perfectly well.

CASE V.—A man of twenty-seven years, who had had the usual symptoms of cystitis, associated with considerable aching in the perineum, for two years. Dr. Belfield said that the last symptom suggested the condition which, upon examination, was found to exist, namely, chronic inflammation of the posterior urethra. During the last month he had given the patient twelve deep injections of nitrate of silver solution of a strength of seven grains to the ounce. The symptoms have almost disappeared.

CASE VI.—A man of forty-three years, of full habit, who for three years had been treated by different physicians by nearly all the usual remedies for cystitis, both local and general. After a careful examination some three months ago, Dr. Belfield suspected a calculous pyelitis of moderate extent. Treatment with the object of relieving this produced, however, no improvement, but within two weeks an attack of severe renal colic occurred, and was followed by the expulsion of three uric-acid calculi—the largest of which was about the size of a bean. Complete recovery from the "cystitis" ensued.

MEDICAL PROGRESS.

Treatment of Gastric Ulcer.—DONKIN (*Wiener medizinische Presse*, November 2, 1890) thinks that the best results in the treatment of gastric ulcer are obtained by giving the patient neither food nor medicine by the mouth, and relying upon rectal alimentation. He does not believe that gelatin suppositories and peptonized preparations have any advantages over beef-tea and milk in rectal feeding. The patient should receive at intervals varying in different cases 2½ ounces of beef-tea and from ½ to 1 ounce of brandy either with or without the yolk of an egg. An equal amount of milk may be substituted for the beef-tea, or the enema may consist of equal parts of each. It is necessary to wash out the rectum before each injection and if it becomes very irritable a few drops of laudanum may be given with each enema. By the mouth, the patient may be occasionally given a small piece of ice but absolutely nothing else. Morphine, given subcutaneously to allay the pain, the author considers the most useful drug that we have in the treatment of gastric ulcers.

In Donkin's experience this treatment causes the gastric symptoms to disappear in from ten to nineteen days, when in addition to the enemata small quantities of milk and bouillon may be given by the mouth. The author has also adopted this method in the treatment of many obstinate cases of dyspepsia.

Guaiac as a Laxative.—MURRELL (*Medical Press and Circular*) thinks that guaiac is a valuable laxative. His attention was drawn to the subject, two years ago, by casually prescribing guaiac lozenges made up with black-currant paste, for a man suffering from rheumatism. The man continued taking the lozenges long after the pain had ceased, and in explanation said that they did him good by acting on the liver and bowels, and said that one or two of the lozenges taken in the morning before breakfast produced a stool promptly and without inconvenience. The author ordered the lozenges for others of his patients suffering from constipation, and what is conventionally called "biliousness," and the results were equally satisfactory. The lozenges not being available for hospital use, he had a confection prepared containing ten grains of guaiac resin to one drachm of honey. This, for the last two years, he has used extensively not only as a purgative, but in the treatment of chronic rheumatism, sciatica, tonsillitis, dysmenorrhœa, and allied affections. He gives from one to two drachms three times daily. The purgative effect is very pronounced, and in one case the patient had fifty-six evacuations in one week. In another case it produced a well-marked rash, covering the arms and legs with an eruption which forcibly reminded one of a copaiba rash. It was accompanied by intense itching which disappeared on discontinuing the drug. The guaiac not infrequently gives rise to a burning sensation in the throat, and to obviate this he prescribes ten grains of the resin in half an ounce of extract of malt. He believes that a trial of guaiac, either as a laxative or purgative, according to the dose employed, will be found satisfactory. It is possible that if

the drug were triturated with cream of tartar, or with some inert substance, such as sugar of milk, its efficacy would be increased, and that itwould produce the desired effect in smaller doses.—*London Medical Recorder*, November 20, 1890.

Iodide of Potassium in the Treatment of Urticaria.—STERN has successfully treated five cases of chronic urticaria by the administration of iodide of potassium, four of the cases having been rebellious to all the measures usually employed in this disease. The fifth case was one of acute urticaria of a few days' duration. None of the patients were syphilitic and all were rapidly cured. In one case which had lasted for four months the intolerable itching disappeared on the second day of treatment, and a complete cure was obtained after two and a half drachms of the iodide had been administered. In two other cases, one of two years' and the other of six years' duration, the effect of the iodide was equally good, cure following the administration of six and eight drachms respectively.—*London Medical Recorder*, November 20, 1890.

Somnal.—As a result of several experiments upon animals and fifty-four administrations to man DR. W. GILMAN THOMPSON (*New York Medical Journal*, Nov. 29, 1890) comes to the following conclusions:

1. The effects of somnal are much more striking and certain than those of urethan, and far less depressing than those of chloral.

2. There is no vertigo or depression after taking somnal, such as may follow the use of sulphonal.

3. The action of somnal is usually very prompt, and doses of half a drachm disguised in a little syrup of tolu or whiskey are always well borne, easily taken, and entirely without deleterious effects.

4. The drug in doses of a drachm is not powerful enough to control decidedly delirium tremens, maniacal delirium, or severe pain.

5. In doses of from thirty to forty minims somnal is a safe and reliable hypnotic for ordinary insomnia.

Creolin in Diseases of Children.—SCHWINZ has used creolin in the treatment of a number of infantile diseases. In ten cases of purulent ophthalmia in the newborn irrigations with a one-per-cent. solution were practised. In two of these cases in which the disease was not very intense there was complete cure at the end of six days. In the eight remaining cases irrigations were continued for four or five weeks but the results were not satisfactory, and recourse was had to solutions of boric acid and nitrate of silver. A solution of the strength of one or two per cent. of the latter was used by instillation and caused less pain than the creolin solution.

Eleven cases of thrush and aphtha which had been treated for a long time with potassium chlorate, potassium permanganate, and boric acid without appreciable results were cured by irrigations of the mouth and pharynx with one-per-cent. solution of creolin.

In cases of umbilical periphlebitis the use of an ointment of creolin was followed in four days by complete disappearance of the inflammation. The author also writes that the use of pure [?] creolin by friction will give gratifying results in the treatment of erysipelas.

In five cases of acute gastro-enteritis creolin was given according to the following formula, and caused the symptoms to disappear in from three to six days:

℞.—Creolin . . . . . 3 drops.
Canella water . . . 2½ ounces.
Syrup of mallows . . . 6 drachms.

Dose for very young children, a small teaspoonful every hour. For older children the creolin may be given in powders thus:

℞.—Creolin . . . . . 15 minims.
Sugar . . . . . 75 grains.—M.

Divide in ten powders and give one or two daily.

In the surgical diseases of children creolin, according to the author, may be used in the strength of from one-half to one per cent. to produce asepsis of the surface and cavities of the body without fear of poisoning.—*Archives of Pediatrics*, December, 1890.

Pambotano: a Substitute for Quinine.—According to *Le Progrès Médicale*, a decoction of pambotano, the root of the *Calliandra Houstoni*, is proposed as a substitute for quinine. Very few cases in which it was used have been reported, and it is impossible as yet to form any opinion of its value.

Application for Chronic Pharyngitis.—The *Canada Lancet* quotes the following prescription for the treatment of chronic pharyngitis:

℞.—Ergotin . . . . . 15 grains.
Tincture of iodine . . 1 drachm.
Glycerin . . . . . 1 ounce.—M.

To be applied three times daily, with a soft brush.

Strophanthus in the Treatment of Exophthalmic Goitre.—In a paper read before the New York State Medical Association (*New York Medical Journal*, November 8, 1890), DR. E. D. FERGUSON reported several cases of exophthalmic goitre in which the administration of strophanthus afforded prompt relief, the patients being able to return to their ordinary occupation. As was expected, however, in no instance was either the exophthalmia or the goitre removed, although in each there was decided improvement. The pulse-rate and the rhythm of the cardiac contractions improved even in cases in which there was undoubtedly dilatation of the left ventricle, and in the latter cases all the signs and symptoms of dilatation disappeared. The only preparation of the drug used by Dr. Ferguson was the tincture, which was given by the mouth three times daily during meals, the initial dose being from eight to ten drops, which was increased, if necessary to reduce the frequency of the pulse, to fifteen, twenty, or even twenty-five drops.

Insoluble Tablets of Antipyrine.—According to DR. ARNOLD, of Zug (*British Medical Journal*, October 4, 1890), many of the tablets of antipyrine, antifebrin, and other new preparations, pass through the alimentary canal undissolved. This fault is easily remedied by having a thin layer of powdered sugar or tragacanth interposed between the layers of the tablet. He advises that physicians from time to time test the solubility of these tablets by placing them in water.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 13, 1890.

DR. BILLINGS AND THE SURGEON-GENERALSHIP.

THE President of the United States is again called upon to fill the high office of Surgeon-General. The task is not an easy one, and we feel it our duty to speak briefly but strongly upon the question. From an early day the principle of seniority has been discarded in filling this office. Barnes and Crane were promoted over the heads of a considerable number of seniors, and we hold that it is essential for the good of the country and the service that this policy should be followed. The best man for the place should be chosen irrespective of seniority. The great scientific and sanitary questions which agitate the medical world to-day have important bearings upon the medical service of the Government, and may require a man who is thoroughly abreast of the times, and fully equipped with the latest attainments of science. The office is not wholly, or perhaps chiefly, a scientific one, however; the Surgeon-General has important executive and administrative duties as well. The general supervision of the great National Museum, and of the famous Library of the Surgeon-General's Office, and of the Government hospital system throughout the country, are among the matters which devolve upon him. He must have strict financial methods, and should be a man of business training and ability. He must be a good judge of men, and able to make his appointments so as to get the right men in the right places, and to get the greatest amount of work out of all of his assistants and associates. Our national medical service now enjoys a high reputation the world over, and it is the duty of the Government to make an appointment at the present juncture that will not only maintain, but enhance this good reputation.

For all the reasons above urged we hold it of the first importance that DR. JOHN SHAW BILLINGS should be named Surgeon-General. Born in Indiana fifty-two years ago, he was graduated from The Medical College of Ohio. He was graduated in medicine in 1860. He entered the army at the opening of the war and saw hard service, including the battles of the Wilderness. As an organizer and executive of hospitals he achieved an early and a high reputation. Under Surgeon-General Barnes he disbursed during eight years many millions of dollars with the greatest satisfaction to his superiors, and in the organization and development of the Library of the Surgeon-General's Office he has shown executive and administrative talents of the highest order.

It is needless to refer to the high position he has attained as an authority upon sanitary science. At the present time he is officially connected with Harvard University, the University of Pennsylvania, Columbia College, and Johns Hopkins University. He has received the highest recognition from abroad. Oxford, Cambridge, Edinburgh, and Munich have conferred honorary degrees upon him, and his career is full of instruction and encouragement to the profession. The special duty to which he has been detailed so long in Washington has not been used as a means of leisure or personal gain. No medical man in the country has worked harder, or to better effect, and the Government would honor itself by rewarding this distinguished man with the highest medical gift that is in its power to bestow. The President and his advisers may rest assured that no appointment they can make will be regarded so favorably by the Medical Corps of the Army and by the medical profession at large.

KOCH'S DISCOVERY.

SINCE our last issue a number of physicians in this country have received a supply of Koch's lymph, and will doubtless soon be ready to present to their professional brethren the results of their experiments. As already announced, Drs. Chittenden and Foster, of New Haven, were the first in the

field by some days, and they will be followed by Dr. Jacobi and Dr. A. McLane Hamilton, of New York, as well as by Dr. Bennett and a committee appointed by the University of Pennsylvania in Philadelphia. We are glad to announce that the reports of Professor Chittenden and Dr. Foster, Dr. Hamilton, and Dr. Bennett have already been secured for publication in THE MEDICAL NEWS; and a number of other gentlemen who have just begun their work with the liquid have promised to contribute reports from week to week. Information derived from widely-separated sources, and obtained primarily by investigators thoroughly qualified to complete such studies, cannot fail to prove of interest to our readers.

In another column will be found a general summary of news concerning the character and effects of the fluid, which, while it conveys no definite information concerning the character of the liquid, shows the direction of thought in Europe in regard to its possible composition.

CORRESPONDENCE.

LONDON.

Koch's Treatment of Tuberculosis—A Case of Sleeping Sickness.

KOCH'S method of treating tuberculosis is still creating great excitement, and almost every day we see in the papers some fresh proof of the widespread desire for advertisement. Meanwhile the first reports of enthusiastic but utterly untrustworthy newspaper reporters have by no means been substantiated, for so far from cases of lupus being cured in a few hours and almost under the eyes of the observer, we have not been shown a single instance in which a cure was effected. That the new treatment exercises a most remarkable influence upon lupus there can be no doubt, for several medical men who have returned from Berlin agree upon that point, and I hoped that last night we who stayed at home would have an opportunity to see one of the cases, for it was expected that Mr. Malcolm Morris would exhibit at the Clinical Society the patient whom he took to Berlin three weeks ago. But it seems that the cure is not sufficiently advanced, and the patient is still there. As, however, Mr. Watson Cheyne and Dr. Heron have returned with some of the precious fluid, and have commenced inoculating patients, we shall not have to wait long before we can judge of the results.

A good deal of abuse has been vented upon the College of Physicians for not sending delegates to investigate the subject, but it seems to me that the College has taken the right position, for at present no facilities are given for investigation; and if such an investigation were permitted, I am by no means sure that the College of Physicians is the proper body to undertake it. The matter is of such great importance that, I think, the Government, and not private parties, should set on foot the inquiry. At present, however, Koch has declined to divulge his method, and although this is contrary to all scientific tradition, no one can compel him to do so. His ostensible reason for secrecy, namely, that incompetent persons would at once prepare a fluid which would not give the expected results, and so bring the treatment into disrepute, is clearly a mere excuse, because it will also apply whenever he does make public his mode of preparing the "brown fluid." The general belief here is that Koch is working at the cure of other infectious diseases on the same lines, and that he is afraid that if he now describes his methods someone will precede him in discovering a cure for the other diseases.

A fortnight ago Dr. Stephen Mackenzie showed a case of the so-called "sleeping sickness" of the Congo, at the Clinical Society. The patient was a negro, aged twenty-two years, who had spent all his life in the neighborhood of the Congo, and had come to England in order that his malady might be thoroughly studied, though not with any expectation of being cured. Nearly all of the members of his family have succumbed to the disease, and in the district where he lived it is well known and much dreaded, for it is believed to prove invariably fatal. As the name implies, a lethargic tendency is the chief characteristic, and is accompanied by progressive weakness. Dr. Mackenzie's patient has been under observation since June, and has had continuous fever. When he arrived he was able to go about and even do light work, but tremulousness gradually came on, and now he is so weak that he can do nothing. His mental powers have grown gradually weaker, so that it is difficult to get him to answer a question. He almost constantly falls asleep, but never sleeps long at a time, either during the night or day. One important feature in the case remains to be mentioned, and that is, the presence of filariæ in the blood. Contrary to the usual rule, these show no periodicity, and are always present—a fact that Dr. Mackenzie is inclined to attribute to the febrile condition. He is doubtful of any connection between the filariæ and the lethargic attacks, as filariæ have not been observed in other cases; but it must be remembered that very few cases have been carefully observed, and probably none so carefully as this one. The blood is, in other respects, normal, and the patient is not the subject of any form of malaria. The case is obviously progressing to a fatal termination, and the report of the autopsy should be of much interest.

PARIS.

The Production of a Biliary Fistula for Disease of the Liver—Sudden Death in Diseases of the Abdominal Organs—Intestinal Antisepsis—Observations on a Guillotined Man.

AT the last meeting of the Academy of Medicine Professor Terrier reported an interesting case of exploratory abdominal section to ascertain the condition of a diseased liver. The history of the case is as follows:

The patient, a man, was admitted to the hospital with the diagnosis of hepatic cyst, but an exploratory puncture showed that there was no cyst, and the diagnosis remained obscure, there being intense jaundice with

clay-colored stools and general symptoms. Professor Terrier determined to open the abdomen. At the operation the liver was found enlarged and congested, but no tumor or calculus was discovered, either in the gall-bladder or ducts. Professor Terrier then determined to make a biliary fistula, and to do this he sutured the mucous portion of the gall-bladder to the abdominal parietes and made an opening sufficiently large to admit a No. 10 catheter. The results of the operation were excellent. Two days later the fæces were of a natural color, while the general symptoms gradually disappeared, and one month later the patient left the hospital with the biliary fistula still open. The liver remained somewhat enlarged.

Dr. Jacquemard has lately made a study of the cause of sudden death in cases of abdominal diseases. The results are of great scientific interest and are important from a medico-legal point of view. The mechanism of sudden death in certain abdominal lesions, such as cancer of the stomach, hepatic cirrhosis, and cancer of the liver and pancreas has heretofore been obscure. Some authors believe that it is the result of cardiac degeneration and consequent syncope; others believe that death in such cases is due to sudden reflex inhibition of the heart. The two following histories are interesting in connection with the subject:

The first case was that of a man, forty-five years old, suffering from carcinoma of the lower curvature of the stomach. He was not cachectic, and his general appearance was excellent; he had no marked cardiac symptoms except a murmur of the right heart. He died suddenly, and on post-mortem examination the tricuspid opening was found dilated—admitting three fingers. The cardiac muscle appeared healthy.

The second patient was suffering from interstitial nephritis of the right kidney, and also from tuberculosis of the right suprarenal capsule. He died suddenly during sleep after a few convulsive movements of his extremities. At the autopsy no lesions were found in the brain or lungs. During life the heart presented no abnormal symptoms, yet at the autopsy the parietes of the right heart were found in a state of myocarditis, the left heart being normal.

The cardiac lesions alone in these two cases, according to the author, were not sufficient to produce sudden death, which, he thinks, was caused by some abdominal reflex. The effect on the heart of a reflex starting from a sudden and prolonged irritation of the filaments of the solar plexus is without danger or gravity if the heart is healthy, but a sudden arrest of cardiac action is probable where there are lesions of the organ.

Professor Debove has presented before the Société Médicale des Hôpitaux a new mode of treating tubercular peritonitis. Spencer Wells, in 1862, opened the abdomen of a case of tubercular peritonitis believing he had to deal with an ovarian cyst. The patient, however, improved after the operation, and since then some surgeons have recommended opening and washing out the cavity for this disease. Dr. Debove, thinking that abdominal section could be dispensed with in such cases, simply tapped, in the case of a woman, aged twenty-eight years, who suffered from tubercular peritonitis, the diagnosis being confirmed by injecting the peritoneal fluid in three guinea-pigs which became tuberculous. As soon as the patient was tapped, the peritoneal cavity was washed out with a saturated solution of boric acid. Eight days later her condition had very much improved—she has gained twelve pounds, and is now considered cured.

At the Société de Biologie Dr. Féré recently presented photographs of a patient suffering from epilepsy treated by large doses of bromide of potassium, which greatly diminished the number and severity of the fits, but caused most serious cutaneous lesions. These lesions disappeared under the use of intestinal antiseptics—naphthol, associated with the salicylate of bismuth. In a number of similar cases Dr. Féré has seen digestive troubles disappear under the influence of the same treatment, permitting one to increase progressively the dose of bromide.

Dr. Gley has presented the results of his observations on a guillotined man whom he had the opportunity to study a minute and a half after death. The heart was flaccid, but still beating regularly. The anterior interventricular groove was mechanically excited by means of needles, which produced that state of the ventricles known as tremulation. The auricles after this excitation also presented tremulation; but, contrary to what took place in the ventricles, their rhythmical movements started again. After a second irritation the right auricle again showed tremulation, while the left auricle continued to beat rhythmically until the fourteenth minute after death. Dr. Gley has observed rhythmical contractions of the diaphragm even three-quarters of an hour after death.

Before closing this letter, let me give you two or three of the most common formulæ used in the Paris hospitals as intestinal antiseptics.

Professor Bouchard recommends the following in cases of gastric and intestinal fermentation as found in cases of gastric dilatation, in poisoning by decayed or diseased meats, in typhlitis, dysentery and typhoid fever, and in diseases in which there is insufficient renal secretion:

℞.—Beta-naphthol, finely pulverized ½ ounce.
Salicylate of bismuth . . 2 drachms.—M.

Divide into thirty wafers, and give from three to ten daily.

Professor Dujardin-Beaumetz recommends the following:

℞.—Pure bisulphide of carbon . 35 grains.
Essence of peppermint . . 30 drops.
Water . . . . . 15 ounces.

The mixture is placed in a large bottle, shaken, and allowed to settle: 8 to 12 tablespoonfuls are to be given daily in half a tumblerful of water and wine, or in milk.

Dr. Huchard recommends:

℞.—Salicylate of bismuth
Salicylate of magnesium } of each 75 grains.
Benzoate of sodium
—M.

Divide into twenty wafers, one of which is given before each meal.

ROME.

The Third Italian Congress of Internal Medicine.

THE third annual Italian Congress of Internal Medicine was held this year at Rome between October 20th

and 23d. Several interesting papers were read, of which I will give a brief account.

The subject of the etiology and treatment of pleurisy occupied the first day of the meeting. Dr. Patella gave a short review of the present status of the subject. He said that ten years ago only three kinds of pleurisy were described—the rheumatic, the traumatic, and that due to extension of the inflammatory process from the lung. We have now also pleurisies of microbian origin. The sero-fibrinous pleurisy is still considered as rheumatic, but another agent besides cold is necessary for its development. The cold probably prepares the organism for microbian infection by modifying the circulation in the blood and lymphatic vessels. The way in which germs penetrate into the pleura is still obscure, but Fränkel has demonstrated that one of the microbes of purulent pleurisy—the encapsulated lanceolated micrococcus—is found in the tonsils, and from there it may reach the pleura through the lymphatic channels. According to Ziemssen, certain pleurisies are not of microbian origin, such as, for instance, those appearing in acute rheumatism. A bacteriological examination of the products is often difficult, and some positively tuberculous pleurisies present no bacilli on examination. Maragliano states that a tubercular pleurisy can give rise to a serous effusion. On the other hand, Dr. Patella has observed non-tuberculous pleurisy in tuberculous patients, the pleurisy being due to Fränkel's diplococcus. The speaker concluded with the following summary: 1. There are sero-fibrinous pleurisies caused by Fränkel's encapsulated micrococcus. 2. There are pleurisies with extensive effusion, probably of tuberculous origin. 3. In tuberculous subjects, pleurisy of non-tuberculous origin may occur. 4. There also exist pleurisies of *chemical* origin, which are not yet understood. 5. It is safer to rely on clinical symptoms than on bacteriological examination to determine the causes and nature of primitive pleurisies. 6. The etiology of pleurisies secondary to acute pulmonary inflammation, meta-pneumonic pleurisies, is certainly that of the pneumonia. Their prognosis is generally more favorable than that of primitive pleurisies. 7. The spontaneous absorption of pus in cases of purulent pleurisy is possible when the pleurisy originates from Fränkel's diplococcus, and whenever this microbe is found we are justified in expecting a cure.

Dr. Luzzato, of Padua, after discussing the subject in a general way, said that the pathogenic agents in purulent pleurisy are the staphylococcus, the streptococcus, the tubercle bacillus, and, in rare cases, the typhoid-fever bacillus, and that sero-purulent pleurisies are rarely associated with tuberculosis. In the treatment of pleurisy, the author rejects mercury and bloodletting, the former having never given him good results, while the latter increases the amount of the effusion. The salicylates, antipyrine, flying blisters, and poultices give some relief. Aspiration must be resorted to when the liquid reaches the level of the third rib.

Dr. Bozzolo, of Turin, then said that the typhoid-fever bacillus could be found in pleurisies oftener than is ordinarily believed. As to the treatment of purulent pleurisy, he very much prefers the operation of excision of part of a rib to simple aspiration.

Dr. Maragliano spoke of the association of pneumonia with pleurisy. He thinks that all cases of fibrinous pneumonia are accompanied by a pleuritic exudate between the third and fifth day of the disease. To be able to diagnose a small quantity of liquid in the pleural cavity, he places his patient in the genu-pectoral position. In order not to mistake the splenic dulness for that of effusion the patient is directed to lie upon the side opposite to that in which the effusion is thought to exist. In doing this the dulness of the spleen is displaced forward, while the pleuritic effusion moves toward the vertebral column. Among 216 cases of pleurisy he has observed 20 hæmorrhagic ones, only 7 occurring in tuberculous subjects, which shows that tuberculosis is not a *sine qua non* of hæmorrhagic effusion. Most of the hæmorrhagic cases were in alcoholics. In regard to treatment, he believes in an early aspiration, which he usually practises between the second and third week of the disease. Contrary to Dr. Maragliano, he thinks that purulent pleurisies should not always be evacuated by resection of a rib, spontaneous resorption being possible.

Dr. Bacelli, of Rome, said that by auscultation eight ounces of liquid can be demonstrated in the pleural cavity; that costal resections should not always be practised in cases of empyæma, and that a simple aspiration may be all that is needed. In cases of encapsulated purulent effusion, resection is indicated, but one must not forget that such operations are often followed by atrophy of the thoracic muscles.

Dr. de Renzi, of Naples, said that the etiology of pleurisy was variable, sometimes Fränkel's diplococcus being the cause, at other times a streptococcus, and, as an example, he mentioned the last epidemic of influenza, during which all pleurisies showed the presence of the streptococcus. He believes that tubercular pleurisy can be cured. Thoracic aspiration often immediately relieves the fever. The influence of pleurisy upon pulmonary tuberculosis may be either good or bad. It will have an unfavorable influence if the pleurisy appears on the healthy side, but if it develops on the same side as the pulmonary disease it may have a very favorable influence. This the author has observed in two cases in which all symptoms due to pulmonary tuberculosis disappeared after the evacuation of a pleuritic effusion.

Dr. Tomaselli, of Catane, recommended wet cupping at the beginning of acute pleurisy; he also employs blisters and the milk diet, aspiration being used only when the effusion persists too long.

Dr. Archangeli, of Rome, spoke of the success of surgical interference in purulent pleurisy, and said that Dr. Maneso, of Rome, has obtained 49 cures out of 52 operations.

Dr. Marino, of Messina, said that he had treated pleuritic exudates by compressed air, but the results were absolutely negative as regards increasing the rapidity of absorption of the exudate, and he thinks that aërotherapy should be reserved for the thoracic retraction consecutive to empyæma, especially in children and adolescents. Dr. Foazio, of Naples, thought aërotherapy very valuable in the treatment of pleuritic effusions.

Dr. Rovigli, of Modena, speaking on the subject of the displacement of pleuritic effusions by the change of position of the patient, said that among 40 patients which he examined for this purpose, only 14 presented a movable effusion, while in 12 of these the effusion was very slightly movable. He thinks that the instability of a

pleuritic exudate depends more upon the quantity than on the nature of the effusion.

Dr. Bianchi, of Florence, gave a short description of the clinical history of colloid cancer of the pylorus. He has found that this cancer is more frequent in men than in women; that it does not ulcerate very readily, and is not painful. Vomiting and dilatation of the stomach are absent, because the pyloric orifice remains open. As differential signs the author enumerated the following as belonging to this affection: When the patient lies on his right side liquid taken into the stomach rapidly passes into the intestine; again, when the patient is standing, if liquid is introduced into his stomach, it rises no higher than the level of the pyloric orifice, if one continues to introduce liquid, on account of the open pylorus. The only rational treatment is extirpation of the growth.

Dr. Filetti recommended a new way of staining fresh blood by means of dried methyl-blue, which colors the nucleus of the white corpuscles. Mr. Gualdi, of Rome, saw no advantage in this process over the one of Dr. Celli-Guarnieri, in which the methyl-blue is dissolved in ascitic fluid or serum.

Dr. Marchiafava, of Rome, spoke on the subject of pernicious intermittent fever, with symptoms of acute paralysis. This form of paralysis, he claims, is quite frequent, but is rarely fatal, as the lesions of the central nervous system are only secondary and dependent on a blood-stasis in the cerebral vessels.

Dr. Mya read a paper on the pathological value of the presence of urobilin in the urine. He has found that in patients suffering from pneumonia, acute rheumatism, typhoid fever, and anæmia, and in intoxication by antipyrine, pyridine, antifebrin, and other antipyretics, the quantity of urobilin is very great, which indicates a destruction of blood-corpuscles. In serious liver diseases we find only traces of urobilin, while in renal lesions urobilin is not found in the urine, but only in the blood.

Dr. Queirolo, of Genoa, spoke of the value of diaphoresis in the treatment of infectious febrile diseases. He said that in experiments undertaken by him 100 grammes of sweat from a healthy man produced no effect when injected in rabbits, while one-third less than that quantity of sweat obtained from patients suffering from typhoid fever, smallpox, etc., produced death. The latter result being obtained with sweat that had been sterilized, the infection cannot be due to a virus, but to a chemical substance, which, however, may be the product of pathogenic microbes. This fact encouraged the author to experiment on the elimination of poisons by the skin, and for this purpose he placed some of his patients in a sweating-room, with favorable results; the patient immediately felt better, and there was a remarkable change observed in the temperature, pulse, respiration, and nerve functions.

Dr. Farina, of Naples, in connection with this remarked that in Africa, where patients suffering from infectious diseases are subjected to sweating on account of the climate, diseases such as scarlet fever, typhoid fever, and measles terminate more rapidly than in Europe.

Dr. Masini, of Genoa, reported six cases of pulmonary tuberculosis treated by intratracheal injections of twenty-per-cent. solution of creasote in oil. Two patients were absolutely cured, although no bacilli had been found in their sputum; two were considerably improved, the fever disappeared, and the sputum and bacilli diminished in quantity, while in the two remaining the improvement was less marked.

Dr. de Lollis said, as a result of his observations on animals, that tannin is not incompatible with opium; and that an enema of opium and tannin will kill an animal as rapidly as an enema of opium alone.

NEW YORK.

To the Editor of THE MEDICAL NEWS,

SIR: It has been said that every new operation usually passes through three distinct stages before it takes its final position among the recognized resources of surgery: First, a period following its announcement, when it is enthusiastically praised; secondly, a stage of reaction, when all sorts of objections and adverse criticisms are heaped upon it, and when it is branded as nearly useless, if not in many cases actually harmful; thirdly, a stage of restitution, when reason again asserts itself, and, reinforced by the results of time and experience, places the operation in its true position before the profession. This description seems appropriate to many discoveries in medical science, and, perhaps, to none more than to Koch's great discovery of the tubercle bacillus. The many special systems of therapeutics which sprang up like mushrooms, almost before the scientific world had recovered from its surprise, have been but a "nine days' wonder," and we now hear fewer fascinating theories and more sober science. Dr. E. F. Brush, in a recent paper entitled "The Mimicry of Animal Tuberculosis in Vegetable Forms," has drawn some interesting lessons from the vegetable kingdom. Nut-galls are really tuberculous processes, affecting the breathing apparatus and nutritive channels of a plant. The gall-fly punctures the leaf and deposits an egg, injecting at the same time a minute drop of what has been called a poison, but which is, in all probability, a digestive ferment. This fluid gives rise to such changes in the nutritive process of the leaf that the irritation which the egg would otherwise cause is entirely overcome. This egg may be likened to the giant-cell of a tubercle in the human subject. An important lesson in therapeutics is to be found in a study of the pest known as the phylloxera, for this is a tuberculous disease due to a bacillus; yet, although its life-history is well understood, and the diseased parts are easy of access, treatment has been futile. It is not enough, therefore, to know that there is a germ constantly present in a mass of morbid material. But, if we have been disappointed in our therapeutic efforts to cure tuberculosis, our pathological studies are teaching us more and more how often Nature puts a stop to a tuberculous process which threatens to invade the whole system.

Dr. H. M. Biggs, not long ago, showed a specimen of tuberculosis of the pericardium. The two layers of the pericardium were adherent, and between them were several cheesy masses. The case was apparently one of primary tuberculosis of the pericardium, in which recovery had taken place, the tubercles having been surrounded by connective tissue, while the peritoneum had

subsequently become involved, and presented the usual lesions of tuberculosis. There were extensive adhesions binding down both lungs, but no tuberculous lesions were found here.

Aside from the unusual type of tuberculosis presented in this case, Dr. Biggs thought that it was of especial interest, as experience was gradually teaching him that there was apparently no form of tuberculosis which might not terminate in recovery. So, altho ugh gaseous enemata, heated air, and other similar "fads" have almost passed out of notice, Nature is constantly showing us how much she can accomplish in staying the hand of disease, if we will but assist her by maintaining good nutrition and providing the patient with proper hygienic surroundings.

The discussion at the Academy of Medicine the other evening on the subject of hydrophobia was something of a failure, if the object of those who arranged for it was to present a clear and authoritative statement of our present knowledge and beliefs concerning this disease, and of the plan of preventive treatment introduced by Pasteur; but the radical differences of opinion which were brought out, not only as to the efficacy of this special mode of treatment, but even as to the very existence of such a disease as hydrophobia, were ample justification for devoting an evening to the discussion. Incidentally, the newspapers and the Pasteur institutes came in for their share of adverse criticism, the former for the sensational accounts which they are continually publishing concerning the wonderful cures said to have followed the anti-rabic treatment, and the latter for their loose methods of investigation and of keeping the records from which their much-quoted statistics were compiled. In connection with this subject, it may not be amiss to note that in a very recent communication from Dr. Paul Gibier, Director of the Pasteur Institute of New York, he states that since it was opened on February 18, 1890, 610 persons who had been bitten by dogs or cats applied for treatment. In 130 of these the existence of hydrophobia in the animals was demonstrated, either by a veterinary examination or by inoculation experiments, and in many cases by the death of some persons or animals who had been bitten by dogs suspected of having rabies. All these persons were subjected to the anti-rabic treatment, and all remain in good health.

The annual meeting of the New York State Medical Association was held this Fall in its new home, the Mott Memorial Hall, 64 Madison Avenue. This building also contains the Association's library, which has grown very rapidly from a small beginning made in June, 1885, at the Carnegie laboratory. A little over five months later, the library contained 3448 books, and 4000 pamphlets. In December of last year it was decided to accept the offer of the trustees of the Mott Library to consolidate the two collections, and on May 5th of the present year the library was opened in its present location. There have been a number of large additions by bequests, and at present the library contains 8788 volumes, which with the 4000 volumes of the Mott collection, make a total of 12,788 books, besides about 5000 pamphlets. The library needs contributions of the recent medical, surgical, and obstetrical publications, a larger list of exchanges, and a permanent fund, which when invested will yield a sufficient sum to maintain and increase the number of books. The central location of this hall, and its quiet surroundings, make it a desirable retreat for the searcher into medical lore.

Progress in the direction of simplifying the practice of antiseptic surgery has been very rapid. Five or six years ago it was thought necessary to deluge the operating-field constantly with an antiseptic solution, and so zealously was this done, that some of our surgeons found it expedient to attire themselves in waterproof garments. Gradually the quantity of fluid employed was reduced, until now occasional sopping of the wound, or a final irrigation with bichloride solution, is considered sufficient. Antiseptic dressings are also less complicated, the Lister protective and the mackintosh being seldom used, while the eight layers of carbolized and resinous gauze have given place to soft bichloride "handkerchiefs," or to simple absorbent gauze, which has been previously steamed in a "sterilizer." Notwithstanding all this simplification, the list of bottles, dressings, dishes and other accessories necessary for the performance of any large operation according to modern ideas, is sufficiently formidable to make many a surgeon's assistant yearn for still greater simplicity. I recently saw a very convenient instrument-dish made of rubber, and capable of being inflated with air like an ordinary rubber ring bed-pan, or of being flattened out and packed away for transportation.

NEWS ITEMS.

Koch's Discovery.—Very little of interest has been developed during the past week concerning the discovery of Koch for the cure of tuberculosis. In this country a number of physicians have been fortunate enough to obtain some of the fluid for experimentation, Professor Chittenden and Dr. Foster, of New Haven, being the first to receive the fluid and to study its action by at least a week. They are now carrying out a series of experiments on three patients, one of whom is suffering from lupus, one from pulmonary phthisis, and one from laryngeal phthisis.

THE MEDICAL NEWS during the past week sent a correspondent to New Haven for the purpose of discovering whether anything unusual had been noticed in the cases in that city after the injection of the fluid, but he was assured by the gentlemen who are using it that the symptoms noted were identical with those described in Koch's original paper, which was published in this journal.

Just as we go to press we hear that Dr. Jacobi and Dr. A. McLane Hamilton, of New York, have begun a series of studies with the liquid and that the committee of the University of Pennsylvania, consisting of Dr. Pepper, Dr. White, Dr. Musser, and Dr. Tyson, has done likewise.

Correspondence from Berlin, combined with newspaper dispatches, show that the possibility of a general distribution of the lymph for curative purposes, particularly in this country, will not be possible for several weeks. It is stated in one of the New York papers that the German Government will have the liquid for sale by the 15th of this month, but so far as we can learn, this is merely a newspaper report, based on very little authoritative information.

Several of the physicians who were in Europe at the time that Koch announced his discovery, have returned

to this country, after having gone to Berlin to investigate the value of the remedy. They all are in accord in stating that the hypodermic injections of the fluid act most favorably upon lupus, and they all insist that it is without value in pulmonary phthisis excepting in its earliest stages.

The latest reports of the cases of lupus under Levy and von Bergmann show that as time goes by the lesions are continually undergoing favorable changes, but these investigators very properly do not claim any permanent effects as yet, this being impossible in the case of a disease which is so slow in its formation as is lupus.

Dr. Dengel has published a paper in the *Berliner klinische Wochenschrift* which, while it endorses the opinions so far expressed, particularly emphasizes the harmfulness of the lymph in well-advanced cases of tubercular disease of the lung.

Much discussion has also been resorted to by the medical journals in Europe as to the composition of the liquid. Thus, Nencki and Sahli have published a paper in the *Correspondenzblatt für Schweizer Aerzte* upon "Enzymes in Therapeutics" with the idea of throwing some light upon Koch's remedy. They point out that the intravenous injection of these soluble ferments in various other diseases produces changes closely allied to those brought about by the liquid of Koch in tuberculosis. It is stated that the favorable action that follows the inoculation of the *streptococcus erysipelatus* into malignant tumors is probably due to the presence of the soluble ferment produced by the cocci. Again, the *Wiener medizinische Presse* publishes an article upon a similar subject, and argues that bio-chemical processes are involved in the production of the liquid, also pointing out that Sewall and others have proved that preventive inoculations with the poison of the rattlesnake finally render the organism capable of withstanding the poison. On the other hand, the *British Medical Journal* reminds its readers that, while these statements are of course very interesting, the possibility of heating Koch's liquid without destroying its specific action seems to render it unlikely that it has any such origin. The *British Medical Journal* also refers to a case, under the care of von Bergmann, in which the lupus disappeared under the use of the fluid, and was reported cured, but nevertheless recurred with great intensity a fortnight after the injections were stopped.

All the physicians who have returned so far from Berlin insist upon what THE MEDICAL NEWS has already insisted upon in previous issues, namely that it is exceedingly inadvisable for either doctors or patients to go to the German capital at the present time, owing to the number already striving unsuccessfully for opportunity to study or receive the liquid.

A number of the regular profession have been fearful ever since the publication of Koch's results lest charlatans should use some bogus liquid upon patients who are only too eager to be treated for consumption, and it seems that in Germany itself this fraud has been first attempted. It is stated that a janitor, named Meyer, who is employed in the Central Hotel, of Berlin, has been accused of selling to some foreign doctors 5 grammes of what he alleged was Koch's lymph, for 300 marks.

Cholera Rife in India.—Despatches from India to the New York *Herald* say that while the Second battalion of the Third Ghoorkha regiment was on the march in the Chin Hills several of the men were stricken with cholera. The troops went into camp at Guatheit, where thirty men, out of a total of sixty attacked, succumbed to the disease. The battalion subsequently broke camp and proceeded to Rangoon During the march many more soldiers were attacked by cholera.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 25 TO DECEMBER 8, 1890.

By direction of the Secretary of War, CHARLES B. EWING, *Captain and Assistant Surgeon*, in addition to his present duties, is assigned to duty as Examiner of Recruits at St. Louis, Mo.—Par. 7, *S. O. 275, Headquarters of the Army, A. G. O.*, November 24, 1890.

By direction of the Secretary of War, EUGENE L. SWIFT, *First Lieutenant and Assistant Surgeon*, is relieved from further duty and station at Fort McDowell, Arizona Territory, and assigned to Fort Thomas, Arizona Territory, where he is now on temporary duty.—Par. 16, *S. O. 282, A. G. O., Washington, D. C.*, December 3, 1890.

By direction of the Secretary of War, JAMES E. PILCHER, *Captain and Assistant Surgeon*, now on leave of absence, will report in person to the commanding general Division of the Atlantic, for temporary duty at Fort Columbus, New York Harbor, during the absence on leave of William E. Hopkins, Captain and Assistant Surgeon.—Par. 3, *S. O. 278, A. G. O., Washington, D. C.*, November 28, 1890.

By direction of the Secretary of War, leave of absence for six months, is granted WILLIAM E. HOPKINS, *Captain and Assistant Surgeon.*—Par. 2, *S. O. 278, A. G. O., Washington, D. C.*, November 28, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 6, 1890.

ATLEE, L. W., *Assistant Surgeon.*—Ordered to examination preliminary to promotion.

MARTIN, H. M., *Surgeon.*—Placed on the Retired List, December 4, 1890.

ALFRED, A. R., *Assistant Surgeon.*—Ordered to the Naval Hospital, Norfolk, Va.

WHITFIELD, J. M., *Assistant Surgeon.*—Detached from the Hospital at Norfolk, and ordered to the U. S. S. "Chicago."

MCCORMICK, A. M. D., *Assistant Surgeon.*—Detached from the U. S. S. "Chicago," and wait orders.

KEENEY, J. F., *Assistant Surgeon.*—Ordered to the U. S. S. "Minnesota."

HARRIS, H. N. T., *Assistant Surgeon.*—Detached from the U. S. S. "Minnesota," and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM NOVEMBER 24 TO DECEMBER 6, 1890.

FESSENDEN, C. S. D., *Surgeon.*—Leave of absence extended seven days, December 4, 1890.

BAILHACHE, P. H., *Surgeon.*—Granted leave of absence for twenty days, November 28, 1890.

HUTTON, W. H. H, *Surgeon.*—To proceed to Solomon's Island, Md., on special duty, November 29, 1890.

SAWTELLE, H. W., *Surgeon.*—Granted leave of absence for ten days, December 2, 1890.

PECKHAM, C. T., *Passed Assistant Surgeon.*—Granted leave of absence for ten days, December 1, 1890.

HUSSEY, S. H., *Assistant Surgeon.*—When relieved, to proceed to New Orleans, La., for duty, November 24, 1890.

GROENEVELT, J. F., *Assistant Surgeon.*—When relieved, to rejoin station, November 24, 1890.

COFER, L. E., *Assistant Surgeon*—Ordered to temporary duty at Boston, Mass., November 24, 1890.

EXTRA EDITION.

MEDICAL NEWS.

A WEEKLY MEDICAL JOURNAL.

Vol. LVII. No. 25. Whole No. 986. SATURDAY, DECEMBER 20, 1890. SUPPLEMENT. Per Annum, $4.00. Per Copy, 10 Cents.

[Entered at the Post Office at Philadelphia as Second-class Matter. Copyright secured.]

SIR JOSEPH LISTER ON KOCH AND HIS METHODS.

SPECIAL CABLE DISPATCH TO THE MEDICAL NEWS.

KOCH AND HIS METHODS.[1]

AFTER some preliminary remarks about his journey to Berlin, Sir Joseph Lister said that the effects of Koch's treatment upon tubercular disease were simply astounding. As an example, he cited cases of extensive lupus of the cheek, in which two days after the injection the diseased surfaces became covered with crusts of dried serum, with no inflammation elsewhere. In cases of strumous glands in the neck the injections caused swelling of the glands with redness of the skin over them and pain. In gelatinous disease of the knee-joint similar effects are observed, only the tubercular tissue being affected.

The systemic effects which follow the injections are severe for a few hours, and consist in transient fever, pains in the limbs, shivering, nausea, and sometimes vomiting. The usual dose of the lymph is one-thousandth of a gramme diluted with water to one gramme. The method is useful in the diagnosis of suspected latent tuberculosis. The therapeutic effects on lupus are separation of the crusts, leaving a more or less sound scar. In tubercular joints the swelling diminishes. In phthisis the sputa becomes scantier and more mucous, the bacilli diminish in number, the sweats disappear, the patient gains in weight, and the physical signs of pulmonary tuberculosis vanish. The important questions are, How far are the effects permanent, and What are the limits to the curative power? Diseased tissue is expelled by sloughing or is absorbed; spontaneous expulsion of deep-seated caseous masses being impossible, fresh infections would demand further and indefinitely prolonged treatment for the production of immunity from tubercular infection.

If it is true that the living but diseased tissues surrounding the tuberculous masses are acted on by the remedy, and are rendered capable of resisting the development of bacilli, then caseous masses would remain harmless as regards further infection, and tubercular disease would be definitely cured, for immunity is wanted to make the treatment perfect. Immunity has been attained in guinea-pigs by very large doses, and perhaps could be attained in man by gradually increasing the size of the doses. Acquired tolerance is best shown by the greatly increased dose borne after several injections. It would seem probable that by steadily pushing the dose a degree of tolerance might be attained equal to immunity.

Sir Joseph Lister then continued as follows:

There is another line of inquiry from which I cannot help hoping for good results. Through Koch's great kindness I had the opportunity of penetrating into the arcana of the Hygienic Institute of Berlin, where I saw most beautiful researches carried on in that institution, of which Koch is the inspiring genius. I saw things which, while they excited my admiration, made me also feel ashamed that we, in England, from one circumstance or another, are so greatly behind our German brethren.

[1] Abstract of an address published in the London Lancet of December 13, 1890.

The researches to which I desire especially to refer are still in progress, and fresh facts are accumulating day by day though they have not yet been published. I am not at liberty to mention details, but there can be no harm in my saying this much, that I saw in the case of two of the most virulent infective diseases to which man is liable, the course of the otherwise deadly disease cut short in the animals on which the experiments were performed, by the injection of a small quantity of a material perfectly constant in character, an inorganic chemical substance, as easily obtained as any article in the materia medica. Not only this, but by means of the same substance these animals were rendered incapable of taking the disease, and under the most potent inoculations perfect immunity was conferred upon them.

I suspect that before many weeks have passed the world will be startled by the disclosure of these facts if they can be applied to man, although our experience of the different behavior of Koch's fluid in guinea-pigs and in the human subject makes this a matter of uncertainty until tested by experiment. But if they can be applied to man, the world will be astonished, and the beneficence of these researches will be recognized everywhere.

At the present time Koch is engaged in the earnest endeavor to produce his remedy for tubercle by some process which could be divulged without the risk of the public being supplied either with material useless from its inertness, or, on the other hand, a deadly poison. Koch, I believe, would not have published his method had it not been for the great pressure brought to bear upon him, until he could produce it in a form capable of being revealed in every detail.

It is nothing but the fear that by publishing now the specific mode of preparing this material he might do immense harm instead of good that prevents him from making it known, and I must say that the carping criticism against Koch, on account of what is spoken of as a "secret remedy," can only proceed from absolute ignorance of the beautiful character of the man. If it should happen that, as with the other diseases to which I have referred, so with tubercle, complete immunity should be obtained by means of some inorganic chemical substance which anyone can prepare, then would be achieved the complete triumph of the treatment of tuberculosis; and, for my part, I rejoice that we are permitted to look forward with hope to that glorious consummation.

AMERICAN REPORTS ON KOCH'S METHOD OF TREATING TUBERCULOSIS.

THE following reports have been received from physicians in New York, Baltimore, and Philadelphia, and are of interest, not only because of the importance of the subject, but also for the reason that they are the first authentic publications of American experience:

REPORT OF CASES TREATED BY KOCH'S LYMPH.

BY DR. FRANCIS P. KINNICUTT, M.D.,
PHYSICIAN TO ST. LUKE'S HOSPITAL, NEW YORK.

UP to the present date fifteen patients suffering from various forms of tubercular disease have been inoculated by me with Koch's lymph, in the wards of St. Luke's Hospital.

The cases were carefully selected with the view to study thoroughly this method of treatment. All of them will remain under my personal observation in the hospital during the entire period of treatment, and a detailed report of their histories, subsequent to inoculation, will be published from time to time.

The cases are as follows: Two cases of lupus of the face; one case of lupus of the hand, accompanied by tuberculous infiltration of a limited portion of one lung; two cases of tuberculous glands (cervical); three cases of hip-joint disease, with intermittently-discharging sinuses; one case of tuberculous disease of the tibia and fibula, with open sinus; one case of prostatic surface tubercular disease; four cases of pulmonary tuberculosis in its early stage and limited in area; one case of doubtful diagnosis is embraced in the above group.

Thus far 0.001 gramme of the lymph has been used for the initial inoculations in all adult cases, and 0.005 in children. Decided reactions have been obtained in all patients but one of the fifteen inoculated. The reactions have been varied in the time of their appearance—from four hours after inoculation to twenty four; also in their intensity and duration. The longest duration of the reaction has been forty-six hours. The highest temperature recorded during the reaction has been 104° F. The increase in the pulse-and respiration-rate has been proportionate to the rise in temperature. The local changes in the cases of lupus have corresponded very exactly with those recorded by the Berlin observers, and have been of the greatest interest. The differential diagnosis in the doubtful case mentioned lay between lupus of the throat and a tertiary specific lesion. No reaction followed the inoculation of 0.001 gramme, and a second of 0.002 gramme, and the case was accordingly regarded as one of specific disease. No symptoms which could occasion any apprehension have been observed in any of the cases. Tables are appended showing the symptoms and signs observed during and following inoculations in three patients presenting different forms of tubercular disease. The local changes observed in the

case of lupus are kindly described by Dr. George H. Fox, by whom the patient was sent to me.

The diagnosis of tubercular disease of the prostate in Case II. was made by Dr. Keyes, by whom the patient was referred to me. The reaction obtained would seem to be corroborative of this diagnosis.

At the present moment, in the stress of increased time and labor demanded by the treatment and observation of the large number of new cases admitted to the wards of the hospital, only the above brief notes are possible.

NOTES ON CASE III. *Lupus vulgaris of left ear.*—On December 11th, at 3 P.M. (date of first injection of lymph), the case presented the following appearance:

The left auricle was considerably thickened, of a dull-red hue and partly covered by adherent flakes of dead epidermis. Below the ear was a rounded, circumscribed patch of lupus, about the size of a silver dollar, the smooth surface of which presented well-marked cicatricial lines, the result of previous scarification. This patch extended for a short distance up behind the ear. Between the paler lines the dull-red hue of the lupoid tissue was still apparent. During the patient's two weeks' residence in St. Luke's Hospital there had been no sensation of pain, burning, or itching in the affected part.

On December 12th, at 3 P.M., there was so marked a change in the appearance of the ear that it was noticeable at first glance, even at a distance. The affected part appeared as though it were acutely inflamed or erysipelatous. The auricle had assumed a bright-red hue, and was considerably swollen. The patch beneath and behind the ear was notably elevated, and the redness had increased to such an extent that the cicatricial appearance of the surface was no longer apparent. At the margin of the patch there was a narrow zone of hyperæmia and a number of prominent red points which had not been noted on the preceding day, and which doubtless indicated the most recent infiltration of the healthy tissue. The patient stated that a burning sensation had occurred during the previous night, and the ear had felt quite painful toward morning. It now felt as it looked, swollen and inflamed.

On December 13th the elevation of the patch and swelling of the auricle had subsided, and the color was less inflammatory. The burning sensation had gone. The epidermic flakes, especially upon the helix of the ear, were dry and whitish. At a single point on the patch below the ear a serous exudation was noted. A second injection of lymph was made.

On December 14th there was not much change in the affected part. There was a slight increase of inflammation, but by no means so marked as after the first injection, although double the dose had been employed.

There was no elevation of the margin of the patch, and the lobe of the ear felt a trifle softer. Below and behind the ear there was a slight moist discharge, with a tendency to honey-like crusting. The patient stated that during the previous night she experienced "a heavy, stupid, sick feeling," and felt a sharp pain in the ear as after the first injection, but the sensation of burning and swelling was much less this time.

On December 15th it was simply noted that the surface of the affected part presented more of an eczematous appearance.

CASE I. *Tubercular infiltration of apex of right lung.*—Female, aged forty years. Sputa contain very numerous tubercle bacilli. No rise of morning or evening temperature during two weeks previous to inoculation. General condition good.

First inoculation, December 10th, 11 A.M., 0.001 gramme. Reaction developed five hours after inoculation; slight chilliness, headache, general malaise, fever. Duration of reaction twenty-one hours. Highest temperature 101.2°. Amount of sputum for twenty-four hours preceding inoculation, 11 drachms; for twenty-four hours following inoculation, 13 drachms; for second twenty-four hours following inoculation, 18 drachms; for third twenty-four hours following inoculation, 3 ounces. Urinary examination: a trace of albumin present both before and after inoculation. Physical signs consisted in crepitation over affected area more marked, with mucous râles in larger tubes of same; no enlargement of spleen.

Second inoculation, December 13th, 3 P.M., 0.001 gramme. Reaction developed thirteen hours after inoculation. Duration of reaction nineteen hours. Highest temperature 101.2°, seven hours after beginning of reaction. Amount of sputa for twenty-four hours following inoculation, 3 ounces. Urinary examination: trace of albumin, otherwise negative. Physical signs: bronchial element of respiratory murmur distinctly more marked, and physical signs of infiltration obtained over an increased area; no enlargement of spleen.

Third inoculation, December 16th, 3 P.M., 0.001 gramme.

CASE II. *Prostatic surface tubercular disease.*—First inoculation, December 11th, 3.30 P.M., 0.001 gramme. Temperature normal. Reaction developed seven and a half hours later; rigors, headache, pains in limbs, general malaise, fever. Duration of reaction thirty-one hours. Highest temperature 104°. Local symptoms, pain and uneasiness over region of bladder, increased irritability of same. Urinary examination: small amount of albumin present before inoculation; distinctly increased during reaction.

Second inoculation, December 13th, 3.30 P.M., 0.001 gramme. Reaction developed four hours later. Duration of reaction thirty hours. Highest temperature 101⅘°. Local symptoms similar to

those following first inoculation. Urinary examination same as preceding, with a few hyaline casts.

Third inoculation, December 16th, 3.30 P.M., 0.001 gramme.

TEMPERATURE (CASE II.).

December 11th,	4 o'clock	P.M.	. . .	99⅘°
" "	5 "	"	. . .	99⅘
" "	6 "	"	. . .	99⅘
" "	8 "	"	. . .	99⅘
" "	10 "	"	. . .	99⅘
" "	12 "	"	. . .	101
" 12th,	1 "	A.M.	. . .	102⅕
" "	3 "	"	. . .	102⅕
" "	5 "	"	. . .	102⅕
" "	7 "	"	. . .	102
" "	9 "	"	. . .	101⅘
" "	11 "	"	. . .	101⅗
" "	12 "	"	. . .	103
" "	2 "	P.M.	. . .	102⅘
" "	4 "	"	. . .	102⅘
" "	6 "	"	. . .	103⅕
" "	7 "	"	. . .	103⅕
" "	8 "	"	. . .	102⅘
" "	9 "	"	. . .	101⅗
" "	10 "	"	. . .	100⅘
" "	11 "	"	. . .	101⅕
" 13th,	1 "	A.M.	. . .	100⅘
" "	3 "	"	. . .	100
" "	4 "	"	. . .	99⅘
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CASE III. — Female, aged twenty-two years. *Lupus of ear and contiguous portions of face and neck, of twelve years' duration.* Under treatment for the greater portion of this time.

First inoculation, December 11th, 3 P.M., 0.001 gramme. Temperature normal. Reaction developed nine hours later; slight rise of temperature and burning sensation in affected ear. Duration of reaction twenty-one hours. Highest temperature 99.8°. (Local signs described in appended note.) Urinary examination negative. No enlargement of spleen.

Second inoculation, December 13th, 0.002 gramme. Reaction developed eleven hours later; slight fever, decided burning sensation in affected ear. Duration of reaction twenty-two hours. Highest temperature 100.6°. Local signs described elsewhere. Urinary examination: trace of albumin, otherwise negative. Physical signs negative; no enlargement of spleen.

Third inoculation, December 16th, 0.003 gramme.

PRELIMINARY REPORT ON KOCH'S LYMPH.

BY WILLIAM OSLER, M.D.,

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AT the meeting of the Johns Hopkins Hospital Medical Society, December 15th, Dr. Osler made a preliminary report on the cases—eleven in number—under treatment by Koch's method. He said: "In the presence of an alleged discovery of such importance we should neither display a blind credulity nor an unreasonable scepticism. The extraordinary enthusiasm which has been aroused in the profession by the announcement is a just tribute to the character of Robert Koch, who is a model worker of unequalled thoroughness, and whose ways and methods have always been those of the patient investigator, well worthy of the unbounded confidence which every expert in pathology places in his statements. The cold test of time can alone determine how far the claims which he has now advanced will be justified, and meanwhile the solution of the question—so far as human medicine is concerned—has been transferred from the laboratory to the hospital wards, in which the careful observations of the next few months should give the necessary data for final judgment.

"In the selection of cases of pulmonary tuberculosis we have begun with patients not far advanced in the disease, and with little or no fever—cases, too, which we have had under observation for some time, and in whose sputa bacilli and elastic tissue have been repeatedly found. We began on Friday, December 12th, the day on which we received the lymph, through the kindness of Dr. Billings, to whom, as stated in a communication from Professor Koch, the first sample of the fluid was sent in America. One-tenth of a cubic centimetre of a one-per-cent. solution was used for the first injection, and as no reaction followed 0.2 c.cm., and then 0.5 c.cm. were used. With the latter strengths the reaction has, in each instance, been fairly characteristic. Hourly observations have been made in each instance, and there has been within six or eight hours a rise in temperature of three or four degrees. In one case there was a slight chill. The constitutional disturbance has not been great, and the chief complaints have been of restlessness, sleeplessness, and slight pains in the back and limbs. In three cases the cough was greatly aggravated. So far, no change of note has been observed in the sputa. The physical signs will be recorded only once in each week, as it is believed that any changes can be better appreciated after these intervals. Two cases of pleurisy—one chronic and one acute—have received injections for purposes of diagnosis. The chronic case was suspected to be tuberculous, but there are no signs of affection of the lung and no expectoration. He is showing reaction after the third injection. The acute case, as yet, has no special symptoms. No advanced cases have been treated, nor is it thought that much can be expected from the method after large cavities have formed and when numerous foci of softened tissue exist in the lungs. No unpleasant effects have, as yet, followed the injections."

Several of the male patients were shown to the Society, and the charts of the hourly observations passed around for the inspection of its members.

[*For conclusion of the reports see page 670.*